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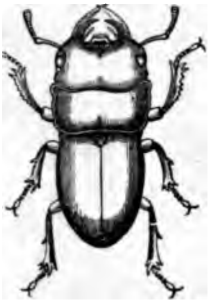

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ENTOMOLOGICAL ROOMS OF
THE ACADEMY OF NATURAL SCIENCES,
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THADDEUS WILLIAM HARRIS, M.D.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. VII. JANUARY, 1896. No. 1.

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THADDEUS WILLIAM HARRIS, M.D.

This month we present our readers with a picture of one of the greatest entomologists America has produced. We suppose but few of our readers have already seen a picture of Dr. Harris and that is our reason for publishing it. He was born in Dorchester, Mass., Nov. 12, 1795, and died on Jan. 16, 1856, at the age of sixty. Dr. Harris graduated from Harvard College in 1815, and took the degree of M.D. in 1820. He published about one hundred and fourteen papers on entomological subjects, but his principal work was "Insects Injurious to Vegetation," which is a classic, and also of value to the present day; and it is doubtful whether the beginner can have any better general work on entomology than the Flint edition of this book. It is not our purpose to say much about Dr. Harris, as this has already been ably done; we merely present his likeness to those who have not seen it.

DURING one of my last collecting trips in September (Queens County, N. Y.) I found on sprouts of white birch, all from one root and not over thirty inches high, thirty-eight larvæ of *Paonius excæcatus*. Usually this species does not oviposit more than three or four ova on one bush.—Dr. R. E. KUNZE.

THE RED BUG.

By JOHN HAMILTON, M.D.

Trombidium (*Leptus*) *irritans* Riley.—This, for the information of the unitiated, is not a beetle, nor a butterfly; in fact, judging from its size, it is, so to speak, not much of anything. It is said to be the larva of some species of *Trombidium*—of which is yet unknown; it is scarlet red, about the size of a pin point, say the one thousandeth part of an inch in length and has six legs (for its figure see Riley's Missouri Reports, vi, p. 122). A small thing, but mighty; a torturer—a murderer of sleep—the tormenter of entomologists, botanists and others who encroach on its domains; not that it bites or stings—it does neither; worse than either, it just tickles. In olden times, when torturing was in vogue, the very acme of human suffering is said to have been induced by a tickling machine, some of which seem to be yet extant in some museum collections of such implements.

It is thought to be a vegetarian, inhabiting the coarse grasses growing along ditches and low grounds. Its mode of action is about this: it gets on the clothing, perhaps by accident, and from its minuteness, readily passes through garments, even of the finest texture, till it reaches the skin, over which it crawls till it comes to one of the larger sweat tubes or pores; say, one six hundred and seventieth of an inch in diameter, and not knowing what kind of territory it has traveled to, it starts down on a tour of investigation; as the tube is very tortuous and scarcely longer than the Red Bug (by which name it is universally known) its progress is necessarily slow, requiring from about 18 to 36 hours to reach the end of the tube which is closed, and which becomes its tomb. The victim is not aware of what is in store till disrobing for the night, when, if there has been no former experience, there is suddenly developed a bad case of hives, nettlerash, urticaria, all blamed on the oyster, fish and pastry diet of the hotel; a rigid course of dieting and medication is instituted next day, the young hotel doctor always, to his great gain and reputation, confirming the diagnosis of the sufferer. The phenomena following its entrance into the tube is about this: a large circular elevation similar to that in nettlerash forms in a few hours, which on being exposed to the air by dissolving becomes intensely itchy; don't scratch; if you do, you are undone, the more you scratch the more you want to. In about thirty-six hours a little blister appears, succeeded by a scab the size of a split pea, the irritation gradually subsides, the scale falls in about six weeks leaving a deep and permanent pit as in small-pox.

Such is the usual course, but there are some more serious records. A Georgia newspaper gives an account of a death from blood poisoning caused by this Red Bug. Medical journals contain notices of erysipelas of the lower extremities from the same cause, and the writer knows of a certain gentleman, who shall be nameless, who lay last Spring near two weeks in a Florida hotel with his lower limbs soaked with tannin in glycerin and done up in iodoform. Entire or comparative immunity from the Red Bug is enjoyed by many of the long-time residents of southern Florida, why, has not been ascertained absolutely, but as they seldom acquire flesh, and their skin become swarthy with a leathery appearance, it may be that the larger sweat tubes contract too greatly to admit of its entrance.

As palliatives of the horrible itchiness, camphor, ammonia, Pond's extract, etc., are used with more or less success. If taken in time the bug can be killed and the itch arrested. According to an old gardener a good lathering with a strong soap before retiring does the business, if used in the evening of the day of infection, it being his opinion that the soap closes the pores and smothers the bug before it has done much mischief. An effectual mode of abortion if done in time, as the writer has witnessed, is a good sponging with a solution of carbolic acid, one ounce in a quart of water, after a good soap bath.

The Red Bug is known from Florida to Texas, and northward to Missouri and along the Atlantic coast to New Jersey, though I never met with it there. My friend, Rev. Prof. Jerome Schmitt, had a little engagement with it in southern Missouri. Mr. H. F. Wickham felt one or two in Texas. It seems to have entirely neglected Mrs. Annie Trumbull Slosson, as she does not mention it, an omission highly improbable, as she always speaks in an inimitable way of the many curious incidents attending her entomological tours. Had she had an encounter with the aggressive Red Bug, the narrative would doubtlessly have been in sportive iambics or tragic verse, probably the latter.

NOTES ON EUROPEAN ENTOMOLOGICAL COLLECTIONS.

By PHILIP P. CALVERT, Ph.D.

It having been suggested that readers of the NEWS would be interested to know something of European entomological museums, the opportunities which the writer has enjoyed of personally examining some of these have been availed of to gather some data of a general character which are here presented.

I.—THE BRITISH MUSEUM.

The Natural History collections of the British Museum were formerly also contained in the classical building on Great Russell St., Bloomsbury, London, W. C., which is now devoted to art and literature. They were removed to the present handsome Natural History Museum, Cromwell Road, South Kensington, London, S. W., rather more than a decade ago, under the directorship of Prof. (Sir) Richard Owen. The present director is Sir William Henry Flower.

While the Insects are represented in the show collections open to the public by specimens selected to illustrate their anatomy, development, habits, classification and such special subjects as mimicry and melanism, the valuable material "for students only" is to be found in the Department of Insects, lodged in the basement in a continuous series of rooms between the front wall and a corridor parallel thereto. Light is afforded by the windows facing Cromwell Road, having a southern exposure; before these are the tables for the use of the Museum entomologists and students. The cases containing the collections are in that part of each room which lies next to the corridor, and are not so well lighted as one could wish, since the only source of light is the above-mentioned row of windows at the other end of the rooms. The specimens are preserved in drawers with glass tops, enclosed in cases with solid doors.

The staff of the Museum at the present time includes the following entomologists, well known by name to the readers of the department of Entomological Literature of this journal: Messrs. A. G. Butler (Assistant Keeper), C. O. Waterhouse (in charge of the Department of Insects), E. E. Austen, C. J. Gahan, G. H. Hampson, F. A. Heron, W. F. Kirby and R. I. Pocock. There are also four boy attendants. While the Department can not and does not undertake to identify insects for those who might desire such a favor, it will answer inquiries addressed to it as to whether specimens sent are or are not of such and such a given species, the type or types of which are presumably in the British Museum collections.

Thanks to the kindness of a friend, the following list mentions some of the more important contents of these collections.

GENERAL.

The original Museum collection quoted by Fabricius more than a hundred years ago.

Sir Joseph Banks' collection of about the same date, kept as a separate collection in Fabrician order.

Dr. Leach's collection.

Hope, Rev. F. W. Types of species described in Gray's Zoological Miscellany.

Curtis, J. Types of species collected by Capt. King, in South America.

Kirby, Rev. W. Types of his "Century of Insects" and of North American species.

Stephens, J. F. His entire collection (British).

Gray, G. R. Most of the species described in Griffith's "Animal Kingdom."

Newman, E. A considerable number of types of N. American and Australian species.

Walker, F. All those described in the Museum Catalogue.

COLEOPTERA.

Laferté. A first selection of his Lamellicorns (4000), including types from Reiche's collection.

Clark, Rev. H. Entire collection of Hydradephaga and Phytophaga.

Bowring, J. C. Entire collection, 230,000 specimens, including Chevrolat's Longicornia intact, Jekel's Rhynchophora and Tatam's Geodephaga.

Saunders, E. Buprestidæ entire, 7200 specimens.

Bates, F. Heteromera entire, 22,000 specimens.

Wollaston, T. V. His collections from the Canaries, Madeira, Cape Verde Is., St. Helena.

Murray, A. Nitidulidæ, and a considerable portion of his Old Calabar collection.

Baly, J. S. Phytophaga entire, except Cassidæ.

Crotch, G. R. A collection made in the Azores by F. Ducane Godman and named by Crotch.

Blackburn, Rev. T. Collection made in the Hawaiian islands.

Waterhouse, G. R. Nearly all his types.

Pascoe, F. P. Entire collection, about 3000 types, 48,000 specimens.

Godman & Salvin. "Biologia Centrali-Americana." As the different portions of this work have been completed, Messrs. Godman & Salvin have presented to the Museum the specimens referred to; so far 61,800 specimens have been received, including the

Geodephaga described by H. W. Bates.
Lamellicornia and Pectinicornia described by H. W. Bates.
Buprestidæ described by C. O. Waterhouse.
Eucnemidæ described by Dr. G. H. Horn.
Heteromera descrided by G. C. Champion.
Bruchidæ described by Dr. D. Sharp.
Phytophaga described by M. Jacoby.
Longicornia described by H. W. Bates and C. J. Gahan.

Parry, Major. Portions of his Lucanidæ.

Gorham, Rev. H. S. Endomychidæ.

Wallace, A. R. Portions of his Cetoniidæ, Euryomia, etc.

Walker, F. Numerous types of Ceylonese species, and species from Vancouver.

NEUROPTERA.

Hagen, H. A. Types of Termites collected by Bates on the Amazons.

Pictet, F. A series of typical Phryganids.

HYMENOPTERA.

Kirby, Rev. W. Bees described in his "Apium Angliæ."

Smith, F. A first selection from his collection of exotics, including many types described by de Saussure.

Devignes. British Ichneumonidæ.

LEPIDOPTERA.

Haworth. Types of his "Lepidoptera Britannica."

Stainton, H. T. Entire collection, 27,300 specimens.

Hewitson, W. C. Entire collection of exotic butterflies, 24,600 specimens.

Moore, F. Collection of Indian Lepidoptera.

Frey. European collection, 18,000 specimens.

Zeller. European collection, 31,000 specimens.

The writer would feel that he were lacking in courtesy were he to omit to record his grateful appreciation of the fact—an important one in this connection—of his being received here and elsewhere in entomological circles in London with the greatest kindness, and afforded the opportunities of examining such insects and books as he desired for his studies. Nay further, his experience in Europe generally has been of such a pleasant character as to lead him to state that the American entomologist has nothing but a kindly welcome to expect from his European colaborers.

BERLIN, Oct. 26, 1895.

———o———

Notes on the Noctuidæ Described by Guenée in the Saunder's Collection.

By WILLIAM SCHAUS.

While working at Walker's American types in the Oxford Museum I have come across the species described by Guenée from the Saunder's collection, and I think the following notes of interest to American Lepidopterists.

Perigea turpis Gn., spec. gen., Noct. i, 232.

This species is a small specimen of *Perigea sutor* Gn., the type of which I have recently examined through the kindness of Mr. Oberthür, and both refer to *P. claufacta* Walk. = *fabrefacta* Morr. The species will stand in North American lists as *P. sutor* Gn.

Eriopus monetifera Gn., spec. gen., Noct. ii, 295.

Now placed in the genus *Metathorasa* Moore.

Ingura lunodes Gn., spec. gen., Noct. ii, 310.

Correctly identified in collections. The species is widely spread, common in Mexico, and will probably be found in Texas.

Ingura oculatrix Gn., spec. gen., Noct. ii, 313.

Correctly identified in collections.

Diastema tigris Gn., spec. gen., Noct. ii, 317.

The types are with Mr. Oberthür and at Oxford.

Gonodonta serix Gn., spec. gen., Noct. ii, 370.

This is a synonym of *G. pyrgo* Cr.

Gonodonta holosericea Gn., sp. gen., Noct. ii, 371.

Correctly identified in most collections.

Gonodonta sinaldus Gn., sp. gen., Noct. ii, 372.

A well-known species.

Achantodes cerusicosta Gn., spec. gen., Noct. ii, 387.

This is a *Pyral*, and is correctly named in the Brit. Museum.

Anomis grandipuncta Gn., spec. gen., Noct. ii, 400.

The synonymy of this species is correctly given by Prof. Smith in his catalogue of Noctuidæ, p. 243.

Cœnipeta lobuligera Gn., spec. gen., Noct. iii, 32.

The type agrees perfectly with *C. lilacina* Btl., which has been placed in the British Museum as a synonym of *C. serapis* Cr.; this last being the oldest name.

Stictoptera vitrea Gn., spec. gen., Noct. iii, 53.

Correctly identified in collections.

Bolina novanda Gn., spec. gen., Noct. iii, 64.

B. lucigera Wlk., *B. agrotoides* Wlk., *B. evelina* Btl. and *B. agrotipennis* Harvey are synonyms of this species. Prof. Smith, in his catalogue of Noctuidæ, considers *B. agrotipennis* Harvey as a dark form of *B. jucunda* Hübn. I have good series of both species, and have carefully examined the specimens in the British Museum, and believe them to be quite distinct.

Bolina heliothoides Gn., spec. gen., Noct. iii, 76.

A synonym of *H. andremona* Cr.

Peosina saundersii Gn., spec. gen., Noct. iii, 133.

This is the ♀ of *P. mexicana* Gn., spec. gen., Noct. iii, 132.

Stonia opistographa Gn., sp. gen., Noct. iii, 212.

A distinct species, and not a synonym of *S. lignaris* Hübn.

Ophisma ablunaris Gn., spec. gen., Noct., iii, 237.

A variable species.

Athyrma dormitrix Gn., spec. gen., Noct., iii, 263.

A synonym of *A. adjutrix* Cr.

Azeta uncas Gn., spec. gen., Noct., iii, 359.

A variable, but well-known species.

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., JANUARY, 1896.

WITH this number the NEWS begins another year and another volume, and it has been decided by the joint Publication Committee of the American Entomological Society and the Entomological Section of The Academy of Natural Sciences to so continue it and maintain the same low price, which is about one-third what the publication would cost if the services of those gentlemen devoting their time to it were paid. We think we give more for the money than any kindred journal in the world, and we are willing to continue the good work with a view of advancing the study of entomology.. Our monthly edition this year will be six hundred copies. To accommodate those who contribute articles we should have at least fifty pages a month, so that all articles can promptly appear in print. Turn in and help us increase our subscription list and we will give you a fifty-page illustrated monthly journal of entomology that all may be proud of.

DURING July of 1895, I took on flowers of swamp milkweed, *Asclepias carnosa*, and pasture thistle, two fine *Hemaris thysbe*, var. *uniformis*, in two localities of Westchester County, N. Y. I also received from a collector in Manitoba three specimens of the same variation, which seem to be the prevailing form in that Northern region.—Dr. R. E. KUNZE.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

A Correction.—The peculiar combination of letters in the title of Mr. Johnson's note in the NEWS for December, page 324, is intended for *Ephestia kuhniella*. I have been afraid to try to pronounce what the letters, as they are printed, actually do spell; but of course the mistake is chargeable against the "devil." The word "sprouts" in the same article should read "spouts."

Monocrepidius vespertinus Injuring Beans—In the December number is a short note in the proceedings of the Feldman Collecting Social, made by Mr. Wenzel, to the effect that the above species was found at Dacosta, N. J., feeding on beans in such numbers as to ruin the crop for market purposes. This insect is not usually a very common one in general collecting; but according to Mr. Wenzel's story, corroborated by Mr. Bland, any number of them were to be found in this field of beans. They were feeding upon the pods, nibbling little holes here and there, around which a black spot then made its appearance, causing the beans to become unfit for market. I have never had such a case brought to my attention before, and have never found these insects in any numbers on cultivated land. It seems an exceptional habit; but possibly there may be other records that I have not noticed, and if so, this department of the NEWS would be a good place to call attention to them. I have frequently seen black spots on wax beans, but these have been always due to the "Bean spot," a fungus disease.

A new way to use Kerosene.—A few days ago, after lecturing to my class on scale insects and the best methods to be adqpted for their destruction, one of the students informed me that he had a very much simpler method of using kerosene than that described by me, and which always proved throroughly successful. According to him, when a tree on his father's farm became scaly, or covered with lichens or other vegetable growth, the trunk was drenched during the Winter with kerosene, to which they then set fire. The kerosene burnt off clean, taking with it scales and all abnormal vegetable growths and leaving it perfectly clean to the sound bark. He assured me that in no case were trees thus treated injured; but also said that it was the trunk and perhaps a few larger branches only that were treated in this way. I happened to have a number of twigs and branches that were badly covered with the Scurfy Scale, in my laboratory, and on two of these I tried the experiment. I dipped the specimens into pure kerosene and almost immediately set them afire, placing them upright on the steam radiator. The kerosene burnt off without touching the wood, except where it was dry and withered, and on cutting into the bark afterward I found that apparently no injury had been done below the outer surface; in fact, except for the smudgy appearance on the outside of the bark it was entirely normal. As for the scales, they had been burnt away nearly clean; here and there a partial cluster of eggs could be found, and occasionally a fragment of a scale still remained on the surface. Had I allowed the kerosene to penetrate a little before setting it afire, I have no doubt the scales would have been burned away completely. This seems like a very heroic remedy, but after all it may not be as bad as it looks. On living tissue a thin film of kerosene will burn away rapidly without developing heat enough to injure the bark itself, while at the same time it would probably take with it all surface excrescences and attachments like scales. The method is worthy of trial at any rate, and this note is published to induce those who may be in a position to test it, to do so. The tree should be sprayed with pure kerosene through a Vermorel nozzle, and then, after allowing the material to remain, say ten to fifteen minutes, it could be lighted at the bottom. Possibly some of the yet lighter and more inflammable oils might also find a use in this way. A sound tree during the Winter season will stand a good deal of application to the outer bark without showing injury. If any experiments are made in this direction I would be obliged to hear of the results through this department of the NEWS.

Scolytus 4-spinosus.—The article in the November number of ENTOMOLOGICAL NEWS on *Scolytus 4-spinosus* Say, was of special interest to me.

There are three species of the genus found near Crafton, Allegheny County, Pa., namely *4-spinosus* Say, *muticus* Say, and *rugulosus* Ratz. The injury done by the former and latter of these species in this locality is such as to warrant the belief that unless some practical and efficient method for checking their ravages is adopted, that it will not be long before the several varieties of hickory about here, as well as certain kinds of fruit trees in young orchards, will be extirpated.

In this locality hickory is not very abundant; just one here and there as it were. In March, 1894, I selected several trees conveniently located, and deadened a greater or less portion of each for the purpose of rearing insects. Among the trees was a large hickory, the upper twenty feet or so being deadened, but not cut down till about the first of April of this year, when I placed it in tight barrels with a piece of muslin serving as the top, it being held down by the hoops. For more accurate observation I placed the twigs, large branches and trunk in separate barrels, which afterwards proved of some significance—more particularly with other kinds of wood, such as ash and butternut, in which it is even advisable to separate the trunk where the rough bark ends and the smooth bark begins. It might be well to state that none of the wood has ever been moistened since being barreled, or rather since being taken in.

I do not intend to enumerate the various species so far emerged, but will confine myself to *Scolytus*, two species of which were reared from this tree, principally from the trunk. They were *S. 4-spinosus* and *S. rugulosus*, there being but a few of the latter. As to the former species, a detailed account is appended showing when and how many emerged.

My own observations go to show that trees in full health and vigor are not so liable to be attacked by *Scolytus*. I do not mean to imply that it is always necessary for some other insect to start the work of destruction, but on the contrary the effects of a severe drought is sufficient excuse for these beetles to start their work on any trees that may have suffered from the lack of water.

The Summer of 1894 witnessed a severe drought in this locality; a few of our trees began to wither, and three of these were then attacked by *Scolytus*, who hastily completed the deadly work by eating holes in the bark, apparently for no other purpose but food. One of these trees was wild cherry, it being killed by *S. rugulosus;* the other two were "Black Tartarian" cherries, and were killed by *S. 4-spinosus*.

Scolytus muticus does not seem to be a pest here; I have found it very rare, save on the occasion of which I shall now speak. On the fifth of August, 1895, I ran across a tree which had been burned in the early part of the previous year. The fire had charred it to a considerable height, and upon examination I found that it contained a number of living inhabitants, among them being the larvæ and imago of *S. muticus*. Being in need of the latter I sawed off one of the main lower branches and barreled it. The following list gives the dates of the emergence of the specimens:

Scolytus 4-spinosus. Raised from hickory.

May 26— 1
" 29— 2
" 30— 8
" 31— 3
June 1—10
" 2— 8
" 3— 9
" 4—12
" 5— 1

June 7— 2
" 8— 3
" 9—11
" 10—10
" 11—15
" 12—14
" 13— 5
" 14— 8
" 16—12

June 17—6
" 18—2
" 19—8
" 20—5
" 21—1
" 22—7
" 26—3
" 28—1
July 20—1

Scolytus muticus. Raised from burnt tree.

Aug. 6—10
" 7—50
" 8—25
" 9—20
" 10—14
" 11—15
" 12—12

Aug. 13—12
" 14— 9
" 15— 8
" 16— 3
" 17— 4
" 18— 2
" 31— 2

Sept. 3—6
" 4—3
" 5—2
" 6—2
" 7—3
" 9—2
" 10—4

EDWARD A. KLAGES.

Lixus concavus *Say*, **as an Injurious Insect.**—In Allegheny County, Pa., the natural food-plant of this beetle is the common Burdock, the insect breeding in the stem of the plant. It is indeed unfortunate that this species is rapidly acquiring a decided taste for Rhubarb, upon which it already depredates to a considerable extent. These beetles being of some size and quite sluggish in movement may be readily picked by hand; they occur from early Spring until late in Fall, being more abundant about the first of June. EDWARD A. KLAGES.

Mr. Klages' communication on the *Lixus* is interesting. This particular species is a common eastern form, and is numerous on the Rhubarb in New Jersey; yet it rarely does any severe injury, because the growers find it profitable to keep the plants trimmed up in good shape, and to use up the leaves about as fast as they mature. Most of them have learned, by practical experience, that it does not pay to allow them to rot on the plants and therefore except in an abandoned patch here and there, the leaves are generally found to be in good condition. This is not an insect that need be much feared, provided reasonable care is exercised in keeping down those leaves in which the larvæ can develop. Although the beetles are not active, yet they frequently evade capture by dropping to the ground when disturbed, and when this is among grass they are not easily found unless the place where they dropped is carefully noted.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

THE staff of the Deparment of Insects of the U. S. National Museum has been reorganized as a result of the sad death of the former Honorary Curator, Professor C. V. Riley.

The reorganization has been effected by the appointment of Mr. L. O. Howard, Entomologist of the U. S. Department of Agriculture, to the position of Honorary Curator of the Department of Insects; of Mr. Wm. H. Ashmead to the position of Custodian of Hymenoptera; and Mr. D. W. Coquillett to the position of Custodian of Diptera. All museum custodians are honorary officers. Mr. M. L. Linell will remain as general assistant to the Honorary Curator.

The Department is at present in excellent condition. It contains a very great amount of material in all orders, and in many directions surpasses any collection in the country. Among others the following are of especial interest:

The large collection, in all orders, of the late Dr. C. V. Riley. All of the material gathered during the past eighteen years by correspondents, field agents, and the office staff of the Division of Entomology, U. S. Department of Agriculture. Part of the collection of the late Asa Fitch. The large collection, in all orders, of the late G. W. Belfrage. The collections in Lepidoptera and Coleoptera made by Dr. John B. Smith down to 1889, together with the types of the Noctuidæ since described by Dr. Smith. The collection of Lepidoptera of the late O. Meeske. The collection of Lepidoptera of G. Boyer. The collection of Coleoptera of M. L. Linell. A part of the collection, in all orders, of the late H. K. Morrison. The collection of Diptera of the late Edward Burgess. The type collection of Syrphidæ made by Dr. S. W. Williston. The collection of Ixodidæ of the late George Marx. The collection of Myriapoda of the late C. H. Bollman. Sets of the neo-tropical collections of Herbert Smith. The collection of Hymenoptera of Wm. J. Fox. The collection of Tineina of Wm. Beutenmüller. The large Japanese collection, in all orders, of Dr. K. Mitsurkuri. The African collections, in all orders, of Dr. W. L. Abbott, Wm. Astor Chanler, J. F. Brady, the last "Eclipse" expedition to West Africa, and of several missionaries. The large collection from South California of D. W. Coquillett, in Coleoptera, Hymenoptera, Lepidoptera and Orthoptera. The Townend Glover manuscripts and plates. In addition to this material there are minor collections which have been the result of the work of government expeditions, or are gifts from United States Consuls and many private individuals.

This enormous mass of material is being cared for by the active and honorary force of the Department, and the perpetuity of the collection is assured. The National Museum building is fire-proof, and this, together with the fact that it is a national institution, renders the Department of Insects a good place for the permanent deposit of types by working specialists in entomology. The policy of the Museum at large, with regard to the use of its collections by students is a broad and liberal one. Students are welcome in all departments, and every facility is given to systematists of recognized standing.—L. O. HOWARD.

IN the Century Dictionary, under *Chrysops*, there is an error that would be misleading to any one not familiar with Diptera. Three figures are given with the following explanation: "1, Female of common cleg (*Chrysops cæcutiens*); 2 and 3, other species of same genus (all natural size)." Now, number 1 is not *C. cæcutiens*, but a *Hæmatopota*, probably *H. pluvialis*, a species almost identical with our *H. americana*. Number 2 is *C. cæcutiens*, and number 3 is *Tabanus bovinus*. All are European species. The figures are good and readily referable to the above species which I have in my collection. There is also a statement in the generic definition that has probably been derived from the description of the larvæ of the genus *Chrysopa*, viz., "Their larvæ are useful in destroying plant-lice." Although little is known of the larvæ of the genus *Chrysops*, it is certain that this statement is incorrect. Like other members of the family Tabanidæ they are carnivorous, and live in damp earth. The larvæ of many of the Tabanids are subaquatic.—C. W. JOHNSON.

FOOD-PLANT AND LARVA OF NATHALIS IOLE Bdv.—In Mr. Osborn's interesting notes of the Rhopalocera of Tennessee, he writes of *N. iole*, "food-plant unknown." Permit me to give this information: The eggs are laid on the "Fetid Marigold," *Dysodea chrysanthemoides* Lag., a very ill-scented annual with yellow flowers. The eggs hatch in three days (the quickest of any butterfly eggs I am acquainted with); they are tall and slender like the eggs of *Colias*, but smoother. The mature larva is shaped like that of *oleracea*, but has two bristle tipped projections in front of second segment, the surface of body is also covered with stiff hairs arising from pale green tubercles, color of head and body dark green, with broad, purple-black dorsal stripe, and two fine lines of yellow and black along the spiracles; duration of larval period ten to thirteen days; the pupa is .38 in. long, slender, the abdomen tapering, head-case produced, rounded bluntly at top, and rounded at sides; mesonotum rather prominent, the top narrow, but not carinated; color of dorsum and all the abdomen yellowish green, dotted thickly with yellow-white, ventral sides of wing-cases dark green; duration of pupa stage six to eight days. In Colorado there are several broods in the year, the last hibernating in pupa state, but frequently the frosts in September will destroy the plants and whole colonies of half-grown larvæ, and the insect is not seen in the same locality again for a year or two.—DAVID BRUCE.

Thecla sheridanii Edw.—This pretty species was first taken in Montana, near the Yellowstone, and described by Mr. Edwards in "Field and Forest" in 1877. I believe the type remained unique until 1890, when I turned up a few examples near Palmer Lake, Colorado. I have taken one or two specimens every year since. I also detected it in a small collection made near Denver by my friend, Mr. E. Oslar, of Colorado Springs, and Prof. Gillette has met with it near Fort Collins. It is a small species, dark grayish brown on upper sides, the under sides of all wings a dark, yet rich green, with a very distinct common white line cut into spots by the veins and edged inwardly with black; it occurs in April and July, and frequents low flowers in grassy slopes and meadows. Mr. Strecker, in his "Synonymic List," has devoted twelve lines to an amusing critique of the trivial name of this insect, which, however, he failed to spell correctly.—DAVID BRUCE.

I WOULD like to ask two questions to be answered through subscribers to the ENT. NEWS: What is the best way to kill and preserve Coleoptera and to pack them away for mailing without mounting them? What is the best and surest remedy for snake and spider bites and for scorpion stings, that can be carried along on a collecting trip?—G. R. PILATE, Tifton, Ga.

LUTHER'S SADDEST EXPERIENCE.

Luther, he was persecuted,
Excommunicaied, hooted,
Disappointed—egged, and booted;
Yelled at by minutest boys,
Waked up by nocturnal noise,
Scratched and torn by fiendish cats,
Highwayed by voracious rats.

Oft upon his locks so hoary
Water fell from upper story;
Oft a turnip or potato
Struck upon his back or pate, Oh!
And wherever he betook him,
A paper bull was sure to hook him.

But the saddest of all
I am forced to relate;
Of a diet of worms
He was forced to partake,—
Of a *diet of worms*
For the Protestants' sake;
Munching crawling caterpillars,
Beetles mixed with moths and millers;
Instead of butter, on his bread
A sauce of butterflies was spread.
Was not this a horrid feast
For a Christian and a priest?

Now if you do not credit me,
Consult D'Aubigne's history.
You'll find what I have told you
Most fearfully and sternly true.

NOTE.—The above stanzas appeared in the "Yale Literary Magazine" in or near the year 1852, from the pen, I believe, of a student. This transcript from memory is believed to be nearly accurate.

J. M. WHITON.

The following lines "to a spider which inhabited a cell," are from the *Anthologia Borealis et Australis:*

In this wild, groping, dark, and dreari cove,
  Of wife, of children, and of health bereft,
I hailed thee, friendly Spider, who hadst wove
  Thy mazy net on yonder mouldering raft:
Would that the cleanlie housemaid's foot had left
  Thee tarrying here, nor took thy life away;
For thou, from out this seare old ceiling's cleft,
  Came down each morn to hede my plaintive lay;
Joying like me to heare sweete musick play,
Wherewith I'd fein beguile the dull, dark, lingering day.

Cowan's Curious Facts.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be limited to twenty-five for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the anatomy of insects, however, whether relating to American or exotic species will be recorded.

1. LE NATURALISTE CANADIEN, xxii, 10.—The last descriptions of L'Abbe Provancher (cont.). Ibid, xxii.—Continuation of same artitle.

2. THE OTTAWA NATURALIST, ix, 8.—*Pamphila peckius*, J. F. *Sphinx luscitiosa*, J. F.

3. ZOOLOGISCHER JAHRBÜCHER (Abtheilung für Systematik, Geographie und Biologie der Thiere), viii, Heft 5.—New experiments on the seasonal dimorphism of butterflies, A. Weismann. The genus *Dorylus* Fabr. and the systematic classification of the Formicidæ, C. Emery. Orthoptera of Paraguay collected by Dr. J. Bohls, E. Giglio Tos.

4. JENAISCHE ZEITSCHRIFT FUR NATURWISSENSCHAFT. HERAUSGEGEBEN VON DER MEDISINISCH-NATURWISSENSCHAFTLICHEN GESELLSCHAFT ZU JENA, xxx, Heft 1.—The development of the spinning apparatus in *Trochosa singoriensis* Laxm., with regard to the abdominal appendages and the wings in insects, A. Jaworowski.

5. SCIENCE, New Series, ii, No. 46.—Katydid orchestration, E. Coues and A. P. Bostwick.

6. PROCEEDINGS AND TRANSACTIONS OF THE NOVA SCOTIAN INSTITUTE OF SCIENCE. Halifax, vol. viii, pt. 4.—Notes on Nova Scotian Zoology, No. 3 [note on *Acheta abbreviata*], H. Piers.

7. TEXAS AGRICULTURAL EXPERIMENT STATION, Bulletin No. 36.—Insect enemies of the sweet-potato, R. H. Price. Insecticides, ibid.

8. ENTOMOLOGISCHE NACHRICHTEN, JAHRGANG, xxi, Heft 20.—Ethiopian Rhopalocera ii (conclusion), F. Karsch.——Ibid. Heft 21.—Review

of the species of toe Coleopterous genus *Necrophorus* Fabr. of the palæarctic fauna, E. Reitter.

9. JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY, September, 1895.—New genera and species of the Tachinidæ, D. W. Coquillett. New North American Tettiginæ, ii, A. P. Morse. The eversible repugnatorial scent glands of insects, A. S. Packard. Some Acarians from a sphagnum swamp. N. Banks. Larva of *Demas propinquilinea;* its systematic position, H. G. Dyar. Note on the Smerinthinæ, A. R. Grote. On the correlation of habit in Nemoscerous and Brachycerous Diptera between aquatic larvæ and blood-sucking adult females, C. H. T. Townsend. Descriptions of the preparatory stages of *Ennomos Alniaria* (Linn.), W. Beutenmüller. Note on *Hyperchiria io* var. *lilith*, ibid. Insects at Watchogue and Beulah Land, Staten Island, N. Y., W. T. Davis. [Note on] *Thecla acadica*, *Catocala coccinata*, *Phyciodes nycteis* and *Dichelonycha fuscula*, W. B. Proceedings of the New York Entomological Society (May 31 and June 4, 1895).

10. ZOOLOGISCHER ANZEIGER, No. 488.—The coxal gland of *Telyphonus caudatus*, T. Adensamer.

11. RECORDS OF THE AUSTRALIAN MUSEUM, ii, 6 —On a case of presumed protective imitiation, F. A. A. Skuse.

12. REVUE SUISSE DE ZOOLOGIE ET ANNALES DU MUSEE D'HISTOIRE NATURELLE DE GENEVE, Tome iii, fasc. 2.—Revision of the Tribes Panesthini and Epilamprini (Orthoptera of the family Blattidæ), H. de Saussure.

13. PROCEEDINGS OF THE BOSTON SOCIETY OF NATURAL HISTORY, xxvi, pt. 4.—Descriptions of certain Lepidopterous larvæ, H. G. Dyar.

14. THE KANSAS UNIVERSITY QUARTERLY, iv, No. 2.—Two remarkable genera of Diptera, S. W. Williston. On *Toxotrypana* of Gerstaecker, W. A. Snow.

15. Yearbook of the United States Department of Agriculture, 1894.—Some scale insects of the orchard, L. O. Howard. The more important insects injurious to stored grain, F. H. Chittenden. Insecticides [directions for their preparation and use].

16. PSYCHE, a journal of entomology, December, 1895.—On the Ephemeridæ and venation nomenclature, V. L. Kellogg. On the nests and parasites of *Prosopis varifrons* Cresson, A. Davidson. The number of stages in *Apatelodes torrefacta*, H. G. Dyar. *Deidamia inscripta*, C. G. Soule. *Schistocera americana* in New England, F. H. Sprague. Insect collection of the U. S. National Museum. Proceedings of the [Cambridge Entomological] Club. New Homoptera received from the New Mexico Agricultural Experiment Station, i, C. F. Baker. The grape-vine Typhlocybids of the Mesilla Valley, T. D. A. Cockerell and C. P. Gillette. Some new insects, T. D. A. Cockerell.

17. OFVERSIGT AF KONGL. VETENSKAPS-AKADEMIENS FORHANDLINGAR. Stockholm, 1895, No. 7.—Contributions to the knowledge of the insect fauna of the Cameroons, iv.—Catalogue of the Hemiptera gathered by Yngve Sjöstedt in northwest Cameroons, C. J. E. Haglund.

18. MITTHEILUNGEN DER SCHWEIZERISCHEN ENTOMOLOGISCHEN GESELLSCHAFT (Bulletin de la Société Entomologique Suisse), Schaffhausen, ix, pt. 5.—Dr. Standfuss' experiments on the influence of extreme temperatures on butterflies, F. Ris. Continuation of Coleoptera Helvetiæ. ——Ibid., ix, pt. 6.—The Papilionidæ of North America in their relation to those of the Old Worle, H. Christ. Review of the other N. American Diurnals in their relation to those of the Old World, ibid.

19. THE ZOOLOGICAL RECORD, volume the thirty-first, 1894, 8vo. London, 1895.

20. ANNALES DES SCIENCES NATURELLES, ZOOLOGIE, T. XX, Nos. 4-6. —Male genital apparatus of the Hymenoptera (cont.), L. Bordas.

21. LEPIDOPTERA INDICA, F. Moore, part xxiii (deals with part of group Charaxina of the Nymphalinæ).

22. ARCHIVES ITALIENNES DE BIOLOGIE, Turin, xxiv, fasc. 2.—The weight of the cocoons of *Bombyx mori*, from the commencement of their weaving to the birth of the moth, L. Luciana and L. Tarulli. [Brief extract from Atti della R. Accademia dei Georgofili, xviii, fasc. 2, 1895.]

23. THE ENTOMOLOGIST. London, No. 391.—On the vertical distribution of the Rhopalocera of the Alps, W. Harcourt-Bath.

24. THE AMERICAN NATURALIST, December, 1895.—The classification of the Lepidoptera on larval characters, H. G. Dyar. *Stemmatoiulus* as an ordinal type, O. F. Cook.

25. TRANSACTIONS OF THE ROYAL SOCIETY OF CANADA, second series, 1895-96 [Extract]—Presidential Address: Practical Entomology, J. Fletcher.

26. BIOLOGIA CENTRALI-AMERICANA, Zoology, part 124.—Arachnida-Araneidea, pp. 145-160, O. P. Cambridge. Coleoptera, vol. iv, pt. 6, pp. 49-80, pl. 3, D. Sharp. Lepidoptera-Heterocera, vol. ii, pp. 233-248, pls. 61 and 62, H. Druce. Rhyncota-Homoptera, vol. ii, pp. 89-112, pl. 7, W. W. Fowler.

27. Frail Children of the Air: Excursions into the World of Butterflies. By Samuel Hubbard Scudder. Houghton, Mifflin & Co., Boston and New York. Price $1.50. The book is composed of a number of essays on butterflies under many different titles, such as " Butterflies in Disguise; a Study in Mimicry." "Deceptive Devices among Caterpillars." "Butterflies as Botanists." "Butterfly Sounds." "Nests and other Structures

made by Caterpillars." "The Eggs of Butterflies." "How Butterflies pass the Winter." "Aromatic Butterflies." "Antigeny, or Sexual Diversity in Butterflies." "A Budget of Curious Facts about Chrysalids." "Butterflies of the Past, etc." As far as possible these papers have been divested of technical details, and in many cases revised or extended, to bring them up to date. These fragments will show, as well as a more elaborate treatise, that there is much to be learned from the study of the lives and structure of our every-day butterflies as can be gleaned in any other branch of natural history. This is a book that can't fail to interest and instruct students of the Lepidoptera.

INDEX TO THE PRECEDING LITERATURE.

The number after each author's name in this index refers to the journal, as numbered in the preceding literature, in which that author's paper is published; * denotes that the paper in question contains descriptions of new North American forms.

THE GENERAL SUBJECT.

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Cook 24.

ARACHNIDA.

Jaworowski 4, Banks 9*, Adensamer 10, Cambridge 26*.

ORTHOPTERA.

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NEUROPTERA.

Kellogg 16.

HEMIPTERA.

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ECONOMIC ENTOMOLOGY.

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Doings of Societies.

PHILADELPHIA, Dec. 10, 1895.

A stated meeting of the Feldman Collecting Social was held at the residence of Mr. H. W. Wenzel, 1509 S. 13th Street. Members present: Messrs. Bland, E. Wenzel, Johnson, Castle, Hoyer, H. W. Wenzel, Fox, Schmitz and Boerner. Honorary members: Prof. John B. Smith and Dr. Henry Skinner. Meeting called to order at 9.10 P.M., President Bland presiding. The Committee on Photograph made a final report, the same was accepted, and, upon motion, the committee was discharged. Dr. Skinner called attention to difference of opinion among collectors as to the proper season for collecting *Cychrus*, desiring the members views thereon; the habits of the species were discussed by Messrs. Wenzel, Bland, Johnson, Smith and Fox, the data mentioned ranging from the end of February to the last of October. Mr. H. W. Wenzel exhibited the following species of *Cryptohypnus*, stating that out of fifteen specimens of *Cryptohypnus obliquatulus* collected at Anglesea, N. J., only three specimens had color markings on the elytra, the other being unicolored, he also mentioned that *Cryptohypnus charis* had been taken in numbers below south Camden, N. J., by himself and *Cryptohypnus exiguus* at Westville, N. J., by W. Reineck. All the species mentioned were collected during the month of May.

Dr. Skinner suggested the idea of the Social advocating the adoption, among collectors, of a uniformity in the length of pins, specifying certain lengths for different orders, and after a discussion made the following motion. The F. C. S. advocates among collectors a general uniformity in the length of pins, and recommends 35 millimetres for pins under No. 6 Klaeger in all orders except Orthoptera, Neuroptera and Lepidoptera and for these orders 38 millimetres under No. 6, the motion being seconded by Prof. Smith; it was carried by the members present without dissent.

Mr. Johnson stated that in going over a lot of *Chrysops* recently received from Dr. W. A. Nason, and the material collected in North Carolina and Virginia last June, he found it to be very full on account of the large number of males it contained. The first lot contained eleven specimens, seven species; the second seven specimens, four species. Osten Sacken, in his Monograph, describes twenty-four species, but of these only five have the description of both sexes; the species are based entirely on the females. As the wing and abdominal markings vary considerably in the two sexes of the same species, it is sometimes quite difficult to determine the males. Of the twenty-two species in his collection, he had the males of twelve. The females are very common during June and July, while the males are rare and usually found on flowers. The specimens taken in North Carolina were caught on the flowers of the "Chinquapin," or dwarf chestnut.

Prof. Smith stated that among the moths collected by Laurent, in Maine last Summer, were two very poor specimens of *Noctua treatii*, which is very rare, of which he knew of but one other specimen which is in the collection of the National Museum.

No further business being presented the meeting adjourned to the annex at 10.45 P.M.

THEO. H. SCHMITZ, *Secretary.*

ENTOMOLOGICAL SECTION OF THE CHICAGO ACADEMY OF SCIENCES.—The regular meeting was held in the Matthew Laflin Memorial Building, Lincoln Park, November 15, at 8 P.M. The Recorder of the Section, Mr. A. J. Snyder, gave an address, illustrated by maps and stereoptican views, entitled "Snap Shots taken by an Entomologist in Utah, Idaho and Yellowstone Park."

The Entomological Section

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF MEETINGS.

The following papers were read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS:

ON THE NESTING HABITS OF ANTHIDIUM CONSIMILE.

By A. DAVIDSON, M.D., Los Angeles, Cal.

I discovered this bee three years ago, having captured my first specimen in the process of building its nest in the crevice of a rock near this city. Since that time I have gathered numerous specimens of its nest in various parts of San Bernardino and Los

Angeles Counties. These nests are built either in the crotches of the terminal branches of shrubs, as shown in the illustration, or in depressions or angles of stones or boulders lying on the ground. The nests vary in size according to the number of cells; if containing six or seven they may be as large as a walnut; if only one, little more than a quarter of an inch long; but all are of the same composition, whether plastered in a crevice of a rock or cunningly perched on a twig. The main mass in which the cells are somewhat irregularly arranged is composed of a tough glue-like substance very copiously intermixed with comparatively large grains of sand.

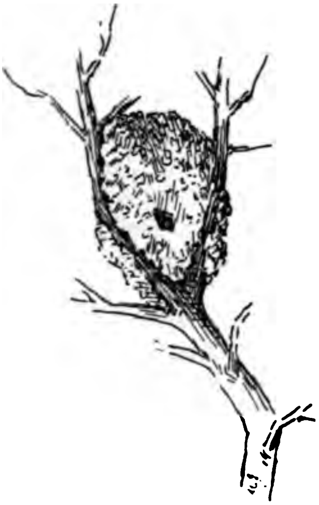

FIG. 1.

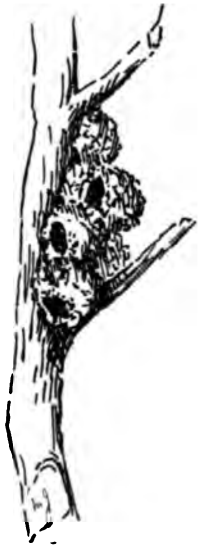

FIG. 2.

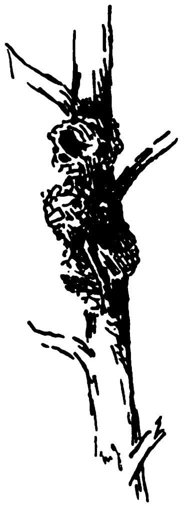

FIG. 3.

1.—Mass of cells of *A. consimile* Ashm.
2.—*A. consimile* Ashm. on twig.
3.—Cell showing cocoon in situ, with nipple-like projection.

Each cell when completed is covered over with these sand grains closely cemented over its surface, and the next cells placed alongside and similarly treated until the whole mass which is ultimately neatly rounded off, looks like a fragment of sandstone, or a miniature conglomerate through which the twig had pushed its way. The outside, by exposure becomes almost as brittle as the rock itself but internally the mass is always soft, though quite tenacious. The grains and stony fragments utilized to build and cover it externally are those of the immediate neighborhood and may consequently be either sandstone or granite.

The bees make their exit in the first two weeks of June, and very soon after commence the construction of their cells, each nest being, I believe, the product of one bee. The food is the usual pollen-like mass of medium consistency, and I believe it is simply deposited in the cell, as with other members of this family, although in its habit of building this bee forms a strange and unique contrast to its congener, *Anthidium emarginatum*, the life-history of which I have already detailed in these pages.

The larva, when mature, spins a cocoon, as shown in the illustration; in form it closely resembles that of *A. emarginatum*, but is thinner, and of a somewhat transparent texture, with a prominent nipple. The cell measures rather more than one-fourth inch long by one-eighth inch wide; the nipple-like projection is one line long and touches the opposite wall of the cell, the larva in consequence not filling the cell. The nipple is, as usual, on the side nearest the outer wall of the nest.

In making its exit the bee has a difficult task to accomplish, and it is not a matter of surprise that it should sometimes be unable to force its way through the tenacious mass of cement.

From the contour of the point of exit I feel assured that the exit is accomplished by the aid of a secretion that softens the cement and allows the bee to force its way out. No fragments were ever found that would indicate that the bees had gnawed their way out, nor does it seem possible that such material could be bitten through by a bee.

The hymenopterous parasites affecting this species are, on account of the usually exposed situation of the nests, probably quite numerous, but so far only four have been discovered. The most common of these is a small bee identified as *Alcidamea producta* Cress., of which seven emerged in one instance from one group of cells. Many of the other parasites were unable to cut their way out, and were discovered dead in situ on breaking open the cell. Of these, *Monodontomerus montivagus* Ashm. is the most common. *Leucospis affinis* Say, was found once. A new species named *Torymus anthidii* Ashm. occupied two cells. Of the last there were twenty in each cell, the larvæ having attacked their host just after the cocoon had been spun.

While collecting at Palm Springs on the Colorado desert in

April, 1893, I gathered a large nest of this bee from one of the desert shrubs; the nest had evidently been constructed the previous season. Some of the occupants found their way out in the following June, and the remaining cells lay unmolested in my cabinet until this Spring, when my curiosity prompted me to examine them. On dissection I found in two of the cells dead, but apparently full-grown, specimens of *Trichodes ornatus* var. *tenellus* with the thin membranous shroud with which the larvæ had surrounded themselves. In two others larvæ were found, one of which was of a dark vermilion hue, and is probably the larva of this *Trichodes;* the other was enclosed in an *Anthidium* cocoon. I put these two larvæ carefully aside, and the bee, which proved to be a typical *A. consimile*, issued in July. The beetle larva is still active and crawling around its prison with apparently no disposition to reveal its identity.

The *Anthidium* last to emerge must have remained in the larval stage for nearly three years, the egg having probably been deposited in the Autumn of 1892, and having remained in my possession since April, 1893. This, although unique in this family, is not the only instance of long continued existence in the larval state; the historic *Osmia* of the British Museum having furnished an example of the same kind.

Instances of bees remaining for more than one season in the larval state are probably not so very rare. It seems reasonable to suppose that those species inhabiting such arid districts as Palm Springs must have some such natural provision to preserve them from extinction, as it frequently happens that in two successive seasons absolutely no rain falls, and food must, of necessity, be very limited.

The beetles found, and the larva still under observation, are probably of the same species, and present the same peculiarity as the bees in question, in that some of them remain for an extended period in the larval state. Of the habits of these beetles (*Trichodes*) I know nothing, although I believe some members of this genus have been found in the nests of bees.

Appended is Mr. Ashmead's description of the two new species:

Anthidium consimile Ashm. n. sp.—Female. Length 7 mm. Black, punctate; a line before front ocellus, the clypeus, the anterior orbit widened at clypeus, a small triangular spot on middle of face just below insertion of antennæ, a stripe on posterior orbits, two large spots on anterior margin of mesonotum, the anterior margin of tegulæ, a spot on the large dilated scale in front of tegulæ, a spot on the anterior margin of mesopleura, hind margin of axillæ and scutellum, stripe beneath the anterior and middle femora, the tips of all femora, and the anterior face of tibiæ, a spot at base of hind tarsi, the posterior margin of first abdominal segment dilated laterally, bands on margins of segments 2 to 5 interrupted medially, and two spots on the sixth segment, all lemon-yellow. The lateral middle of the yellow abdominal bands are all emarginated by a quadrate or quadrilateral black spot. The hind coxæ beneath are armed with a small whitish spine. Wings hyaline, the marginal cell and the apices broadly fuliginous.

Allied to *A. parvum* and *A. simile* Cr.

Torymus anthidii n. sp. ♀.—Length 1.75–2 mm.; ovipositor nearly as long as the abdomen. Dull bronzy green, finely sericeous, the collar anteriorly and beneath bluish. Head and thorax finely shagreened; scape and tibiæ brownish yellow, tarsi whitish, the hind tibiæ, except tips, sometimes embrowned; coxæ and femora metallic; flagellum brown, the joints, except the conical last joint, all wider than long. Head transverse, very little wider than the thorax, antereo-posteriorly not very thick, flat behind the eyes; viewed from in front almost round, not longer than wide, the frons with a slight antennal impression; eyes large; ocelli subtriangularly arranged, the lateral closer to the margin of the eye than to the front ocellus; mandibles ferruginous; antennæ inserted a little below the middle of the face. Thorax a little more than twice as long as wide, the parapsidal furrows distinct, but not deep or sharply defined; scutellum convex, longer than wide, rounded posteriorly, the axillæ a little nearer to each other than their width at base; metanotum very short, without a median carina, the spiracles very minute, round. Wings hyaline, the veins brownish yellow, the postmarginal vein twice as long as the stigmal, the marginal vein one-half longer than the postmarginal. Abdomen short, subcompressed, viewed laterally it appears nearly as deep dorso-ventrally as it is long, the first body segment is fully two-thirds as long as the whole abdomen, the second segment as long as the third and fourth united, the fourth being longer than the third, while the following segments are short.

Described from several ♀ specimens, reared by Dr. A. Davidson, from the cells of a bee, *Anthihium consimile*.

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DESCRIPTIONS OF NEW SPECIES OF NOCTUIDÆ.

By John B. Smith, Sc.D.

(Continued from vol. vi, p. 340.)

Acronycta pyralis n. sp. Pl. xv, fig. 1.*—Ground color a very dark powdery gray; head and thorax without distinct markings, but the tip of the collar grayish and the patagiæ indefinitely black margined. The primaries have all the ordinary maculation evident, but not sharply defined. Basal line single, black, and marked on the costa only. T. a. line nearly upright, outcurved between the veins, black, preceded by a few pale scales. T. p. line widely outcurved over the cell and a little incurved below, usually remote from the center of the wing; black in color, lunate between the veins and followed by a paler gray shade. S. t. line obscure, and marked only by an irregular and incomplete preceding dark shade. There is a series of blackish terminal lunules and a very evident, blackish, somewhat diffuse shade across the median space close to and parallel with the t. p. line, somewhat obscuring the reniform. Orbicular large, oval, obscurely defined by black scales, with or without a dark central spot. Reniform broad, upright, a little incurved; outwardly a little paler than the ground color, but inferiorly obscured by the median shade. Secondaries smoky, with an indefinite extra-median line and pale fringes. Beneath, smoky and powdery; both wings with an outer line. Expands 31-34 mm.; 1.24-1.36 inches.

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* The references are all to Plate XV in the December number of Volume VI.

Hab.—Calgary, July 13.

Two specimens, both females, were sent me by Mr. Dod under the number 31, and this is said to represent his stock. The species is the darkest of all those known to me, resembling *lithospila* in this respect, but quite different in markings.

Hadena (Xylophasia) versuta n. sp. Pl. xv, fig. 14.—Ground color dull, dirty, blackish gray; the surface rough and powdery. The head is somewhat paler; the collar gray tipped, and with an indistinct dusky central line. The primaries have all the ordinary marking, but all obscure and indistinct. Basal line geminate, blackish, marked by a little incurve to the base. T. a. line geminate, the defining line scarcely contrasting; as a whole outcurved and only a little irregular. T. p. line geminate, the inner defining line made up of a black or blackish lunules, the outer line even and only a little darker gray; as a whole, nearly parallel with the outer margin. S. t. line formed of white scales, more or less broken, but forming an obvious **W**, on veins 3 and 4. There is a series of black terminal lunules, and the dark fringes are pale spotted on the veins. Beyond the t. p. line the s. t. space is a little paler, shading however to the same dull gray color before the s. t. line. Ordinary spots obscure, but all traceable. Claviform outlined by black scales and with a narrow streak extending from it to the t. p. line. Orbicular large, defined only at the sides, and a little paler in the center. Reniform also very large and incompletely defined, paler powdered through the center. Secondaries whitish, semi-transparent towards the base, more smoky outwardly. There is an obscure discal lunule, and the veins are dark marked. On the underside the wings are powdery gray, the secondaries with a discal lunule and a vague outer shade. Expands 40 mm.; 1.60 inches.

Hab.—Calgary, June 26 and July 2 "at Treacle."

Mr. Dod sent me two females and said they were the only ones taken in 1894. Both specimens are females, and represent an obscure species which I had previously seen, but had been afraid to name from lack of sufficient material. I now believe it to be a good one, and finds its allies near *centralis*, though it bears at first sight the appearance of a very much faded and poor *castanea*. There are several species belonging near the present, that yet remain to be described, and three of them at least are in my own collection at the present time.

Hadena (Xylophasia) contradicta n. sp. Pl. xv, fig. 13.—Ground color a rich, rusty, red-brown. Head and thorax immaculate. The primaries have the median and terminal spaces like the thorax, of the darker ground color, while the basal and subterminal spaces are distinctly paler, with a more yellowish cast, and the wings are thus somewhat contrastingly colored. The ordinary lines are all distinct. Basal line black, with a little inward loop to the base of the wing, above the submedian vein. T. a. line broad, black, a little irregular, outwardly oblique, but a trifle curved; preceded inwardly by a somewhat marked paler shade. T. p. line distinct, black, even, abruptly outcurved over the cell, and then evenly oblique to the hind margin. S. t. line irregular, marked by a following dusky shade, which becomes more prominent and broader, acutely indenting the line opposite veins 2 and 5. Through this space the veins are black marked, while preceding the dusky shade there is a distinct paler line. There is a series of small, dusky, terminal lunules, and the fringes are dark cut in the interspaces. Claviform very small and pale, very narrowly blackish ringed. Orbicular round or nearly so, without distinct defining line, and of the pale ground color. The same may be said of the reniform, which is of moderate size and upright; only a little kidney-shaped. A fairly distinct median shade crosses the median space outwardly, closely margining the inner edge of the reniform, and from that point running parallel and close to the t. p. line. Secondaries pale, whitish with a reddish suffusion, which becomes quite marked in the fringes. There is a distinct, blackish, extra-median line, and the terminal shading as well as a small discal lunule. Beneath, the wings are reddish powdered; the primaries a litle dusky centrally and both wings crossed by a very prominent, black, outer line. Expands 42 mm.; 1.68 inches.

Hab.—Calgary, June 22, "Treacle."

Mr. Dod says this is a unique, and it certainly is a very pretty species and different from anything that I have seen. It is best placed in the group *vultuosa*, but has some affinity with the next, or *finitima* group. It is, however, more broadly and contrastingly colored than any other species in this series, and should, therefore, be rather easily recognizable.

Homohadena stabilis n. sp. Pl. xv, fig. 15.—Ground color obscure red-brown, with a smoky suffusion. Collar tipped with pale gray; otherwise the head and thorax immaculate. On the primaries the median lines are present, narrow, a little darker brown, not distinct in any specimen seen and sometimes almost obsolete. T. a. line slightly outcurved in one specimen, a little angulated inwardly at the center. T. p. line rather broadly outcurved over the cell, and only a little incurved below that point. It is a little relieved in some specimens by a faintly paler shade. S. t. line wanting. There is no distinct terminal line; though there is a slight darkening at the base of the fringes. Secondaries dull, smoky brown, without markings of any kind, but the fringes are paler. Underside uniform, dull, smoky brown, a little paler toward the base. The ordinary spots on the upperside are vaguely traceable in some specimens, but usually wanting. Expands 27–32 mm.; 1.08–1.28 inches.

Hab.—Calgary, in July.

Mr. Dod sent me five specimens representing both sexes, all in good condition except the one from which the figure was made. This was used, because it was mounted on a low pin like the other specimens photographed, and will serve only to give the general outline. It seems not uncommon, and besides the specimens sent me, I have seen a number of others sent to the late Mr. Neumoegen. The insect belongs with *figurata* in the synopsis, but differs from it by not having the median lines connected and being much more obscure in color. There should be no difficulty in recognizing this simply marked form.

Deva trabea n. sp. Pl. xy, fig. 16.—Ground color a pale whitish gray, overlaid by ocherous, golden and silver scales. Head and thorax pale, but the scales and hair are black and brown tipped, forming on the patagiæ margining lines. Tuftings prominent, the vestiture entirely loose and divergent. The wings are mottled, difficult to describe, but all the ordinary markings are present. Basal space more or less silvery, crossed by a yellow-brown basal line, that is single and outwardly limited by the geminate t. a. line. This line is silvery, margined on each side with yellow-brown, and as a whole rather evenly outcurved. T. p. line geminate, the defining brown lines distinct, the included space silver gilt. As a whole the course of the line is parallel with the outer margin, but it is irregular and more or less incurved between the veins, or angulated. There is a distinct, brown, median shade line, extending almost through the center of the wing, and parallel with the outer margin. S. t. line marked by the difference in shade between the s. t. and the terminal spaces. Terminal space very gray, and this invades the s. t. space in the costal region, where the line is marked only by a small costal spot. Opposite the cell there are two brown dashes, below which the s. t. space is darker than the terminal space, though paler than the center of the wing.

Blackish, scale powderings cover the surface throughout, but are most prominent in the paler parts of the wing. There is a continuous, brown, terminal line. The orbicular is round, broadly ringed with silver, and the center is somewhat gilded. Below this spot is a U-shaped mark, broadly silver margined and centered with the ground color. The reniform is obscure, scarcely outlined, and so nearly like the ground color that it is recognizable only on close examination. Secondaries whitish with a smoky suffusion and somewhat iridescent. Fringes whitish, set off by a continuous, blackish, terminal line. On the underside the wing is whitish, powdered with gray, and on both pairs there is a more or less obvious median line and a subterminal shade; also a continuous, blackish, terminal line. Expands 39 mm.; 1.56 inches.

Hab.—Calgary, 1894.

The specimen is numbered 20, and is said by Mr. Dod to be unique. The species is a strongly marked one, quite different in character from those heretofore described, and it agrees with them in the enormously long palpi which project for half their length above the vertex.

Plusia insolita n. sp. Pl. xv, fig. 17.—Ground color a rich golden brown with metallic reflections. Head uniform, rusty brown in color. Collar is tipped with bluish gray, beneath which is a rusty brown band, inferiorly margined by another gray line, and the lowest portion is yet paler; more grayish. Thoracic vestiture gray tipped, the usual tuftings prominent. Abdominal tuftings also well marked, prominent, and brown. Taken as a whole the primaries have a brown base, velvety in parts, and with golden reflections when turned obliquely to the light. Along the costa and in the basal space is a suffusion of lilac gray scales, and beyond the t. p. line is a broad lilac band. In the terminal space are other lilac shadings. Below the silvery mark, which extends through the median space, is a yellowish streak, broadest at the t. p. line. Basal line silver gilt, preceded by a few black scales, and joining the base in the submedian interspace. T. a. line silver gilt, followed by black scales and preceded by golden brown. It is outwardly bent from the costa, touches the orbicular, and is then inwardly oblique, reaching the hind margin very close to the base. T. p. line yellowish, a little silvered, preceded and followed by narrow, brown, defining lines. It is acutely angulated on the costa, then evenly oblique inwardly to the silver mark, where it makes an abrupt angle over the submedian vein, and is thence evenly oblique to the inner margin. S. t. line very irregularly sinuate, with a broad outward tooth nearly opposite the middle of the outer margin. There is a narrow, terminal, brown line, and a slender line through the fringes. The ordinary spots are fairly evident; the orbicular elongated, oval, decumbent, deep brown, with a slender silver outline, and it rests upon the beginning of the silvery mark which extends from that point in the form of two lines which unite before they reach the angle of the t. p. line. The reniform is narrow, oblique, faintly outlined by silver gilt scales outwardly, black shaded, but this shading crossed by the gilded veins. Secondaries of the usual smoky color, with a yellowish tint, as is also the underside. There is a vague paler line through the secondaries, and the wings are dusky outwardly. Expands 35-40 mm.; 1.40-1.60 inches.

Hab.—Calgary, in 1894.

Two specimens, both females, were sent me by Mr. Dod, who says "they are rare." The species of *Plusia* are difficult to describe, and a reference to figure 17 will be perhaps more satisfactory than the description. The species is unlike any known to me, and I cannot identify it with the descriptions of any species not in my collection.

Neuronia americana Smith.

It was quite a surprise to me to receive a specimen of this insect, numbered 61, and marked Calgary, Aug. 28, 1894. It is a female, larger than the specimens I had seen before, and expands 37 mm. or 1.50 inches. Mr. Dod writes concerning it, "rather common at light August, '94."

THOSE who recognized General Count "Dejeau" and "the late Joseph O. Westwood" in the NEWS for November last, in spite of their disguises, may have read, with some amusement, in the same number (p. 302) certain statements attributed to me, likewise in disguise, regarding Malpighian "tubercles" without recalling that the proper term was employed in a paper in the NEWS for June, 1895, p. 181.—PHILIP P. CALVERT, Berlin, Germany, Dec. 16, 1895.

OBITUARY.

Monsieur EMILE LOUIS RAGONOT, Président de la Société Entomologique de France, Officier D'Académie.—It was with feelings of the most profound sorrow that I received quite recently a letter deeply bordered with black announcing the sad departure from this life of Mons. Emile Louis Ragonot, the distinguished President of the Entomological Society of France, one of the most widely known and accomplished entomologists of the latter half of this century. Mons. Ragonot died at his home, No. 12 Quai de la Rapée, on October 13, in the fifty-third year of his age.

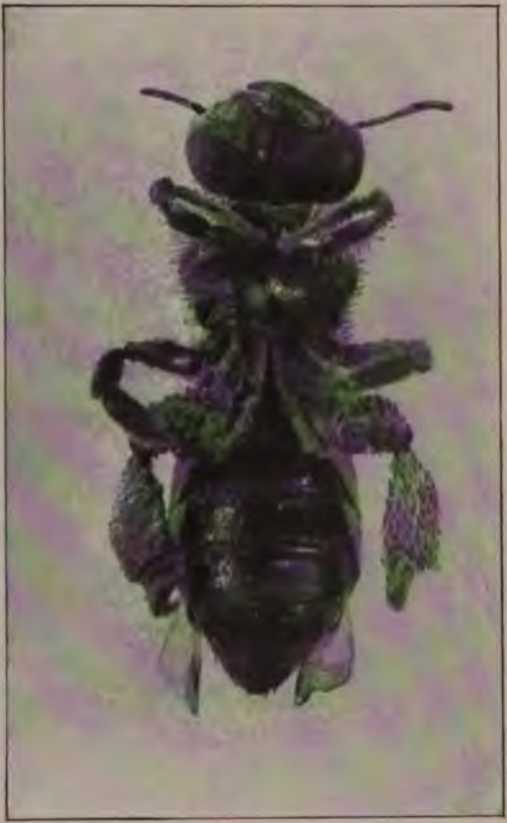
My departed friend will be known forever in the annals of entomological science as the most accomplished and faithful student of the Phycitidæ and Pyralidæ, who has appeared upon French soil during the present century. His labors have been extensive and various, but they find their crown in the magnificent Monograph of the Phycitinæ of the World, the first portion of which comprises the seventh volume of the "Mémoires sur les Lépidopteres," which are being edited and published by His Imperial Highness, the Grand Duke Nicholas, of Russia. The second volume was in course of preparation at the time when death overtook the indefatigable laborer, but it is hoped that the work is so well advanced that it may be brought to a successful and worthy completion, even without the guiding hand and controling mind of the distinguished author. Monsieur Ragonot was a banker, possessed of the means to enable him to prosecute his researches widely and thoroughly. He had succeeded in bringing together one of the most important and complete collections representing his favorite groups which is in existence, and his well-known reputation for strict probity and scientific ability led to his being entrusted with the treasures of most of the private and public collections of both hemispheres in order to facilitate his labors upon the monumental work which he had undertaken.

In early life he had been actively engaged in business in the city of London, having resided there for many years. In consequence he was a perfect master of the English tongue, and some of his friends have been in the habit of regarding him as more typically English than French in his style of thought. No one corresponding with him in English would have imagined from the style of his letters that he was other than English, so pure was the idiom and so genuinely English was the style. But he was as intensely French as he was English, and no one familiar with the pleasant life of his home, can fail to remember it as a typical French household, full of the brightness and vivacity which characterize the life of that people.

In person, Monsieur Ragonot was of an engaging presence, modest, affable, earnest, yet never so deeply engaged in the absorbing duties of his calling, or the favorite recreations of his study, as to fail to have a moment for the interchange of quiet pleasantries. Bright, quick, precise in speech, instantly ready to grasp an idea, it was a thorough pleasure to be thrown, if even for only a short time, into his society. In his death science has lost one of its leaders.

W. J. HOLLAND.

ENTOMOLOGICAL NEWS for December, was mailed November 30, 1895.



ANDRENA VICINA LOADED WITH POLLEN.

(From a photograph, enlarged 8 diameters)

ENTOMOLOGICAL NEWS
AND
PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,
ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. VII. FEBRUARY, 1896. No. 2.

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COLEOPTERA COLLECTING NOTES FOR 1895.

By FRED. C. BOWDITCH, Boston, Mass.

The early Spring gave one good day for collecting on the ice, the conditions most favorable being a south slope free from ice or snow, with a small pond or flowed meadow at the foot covered with ice, a bright warm sunny day and a gentle wind from the slope over the ice at the foot; the insects take wing and are borne onto the ice: or the little streams of water which trickle from the slopes carry minute species down to the ice edge, the collector's work is only walking over the ice, picking up the fallen, or searching the grass blades just at the edge of the little rivulets for minute forms which gather in clusters as they are brought down by the water. Almost any patch of melting ice in a meadow will reward the collector who searches the edges, but the south slope gives the best field. Fresh hard wood sap was also good last Spring and furnished very fine series of two species of Nitidulidæ, the best place being between the bark and the stump where the former had just begun to warp away from the latter.

My store of twigs and branches produced a fine lot of Cerambycidæ, chief among which were about fifteen *Xylotrechus* 4-

maculatus Hald., which emerged from beech branches gathered in August, 1894. The species operates in branches of an inch to an inch and one-half in diameter, making a clumsy cut very different from that of *Elaphidion*. but which weakens the branch, so that it falls after a severe wind, the curious part of it, being that several specimens may come from a single limb, while only one makes a breaking cut on the branch; whether any remain in the stump left on the tree I have not yet determined; the species in its mode of operations is midway between *Elaphidion*, which makes a clean cut and fails, and *Goes*, which makes no cut at all and remains.

Hickory twigs yielded a fine pair of *Purpuricenus humeralis* var. *axillaris* Hald. I am inclined to think it a common species, but comparatively seldom seen as it prefers the tops of trees. A pair of *Ichnea laticornis* Say also appeared for the first time in my hatching-box. I later took a third specimen on the branch of a freshly fallen red oak (Winter of 1894).

Leptostylus macula Say occurred plentifully on dead poison dog wood (*Rhus glabra*).

About a dozen or fifteen of a species, called for the present *Acanthocinus obsoletus* Oliv., occurred on freshly-cut white and Scotch pine logs, about the same number of specimens were taken in 1894 under similar circumstances; it seems very short lived, only appearing for a few days about June 15th. Two *Chrysobothris azurea* Lec. were taken from alder on June 8th; on the 23d I captured a third on recently-cut twigs of red oak; about a week later I saw a fourth in the same place, but failed to take it; I find it the liveliest of our Buprestidæ, and withal one of the rarest, and its beauty always makes the loss of a specimen cause for regret.

Dying black alder bushes yielded both sexes of *Dicerca pugionata* Germ. and *Acoptus suturalis* Lec.; two specimens of *Hormiscus saltater* Lec. were picked off a hickory twig, one in June, the other in August. The Summer drought made the early September water beetle collecting uncommonly good, specimens being concentrated in the few places not dried up, mere numbers were excessive; from the mass I got quite an amount of picked material. The Autumn collecting on fungi was excellent, and I took many small Silphidæ and Nitidulidæ, among them many good things which I have not had an opportunity to study. What pleased me most was the capture of a pair of *Mycetophagus tenuifasciatus* Horn in a small brown fungus growing on wild cherry; the specimens were taken August 24th and September 29th; since then I have found the same fungus on white oak.

The early part of the season was favorable for Chrysomlidæ, and yielded many good things, but the drought cut vegetation so that the latter part of the season was poor.

———o———

TYPES IN THE NEUMOEGEN COLLECTION.—III.

WITH A FEW NOTES THEREON.

By Dr. Rodrigues Ottolengui.

THYATIRIDÆ.

Euthyatira lorata ♂ Grt. Washington Terr., Morrison.
Bombycia semicircularis ♂ Grt. Washington Terr., Morrison.

NOCTUIDÆ.

Acronycta quadrata ♂ (♂) Grt. Nebraska.
Acronycta edolata ♂♀ (♂♀) Grt. Arizona, Doll.
Rhynchagrostis bimarginalis ♂ (♀) Grt. Hot Springs.
Rhynchagrostis crenulata ♂ (♀) Smith. California.
Adelphagrotis stellaris ♀ (♂) Grt. Arizona, Doll.
Abagrotis erratica ♂ (♀) Smith. California.
Pachnobia monochromatea ♂ Morr. Boston, Mass., Morrison.
Pachnobia manifesta ♂ Morr. Locality not given. Morrison.
Pachnobia elevata ♂ Smith. Colorado, Bruce.
Pachnobia scropulana ♀ Morr. 'Mt. Washington, Morr.

A note by Mr. Neumoegen says that this is a synonym of *Pachnobia wockei* Moeschl.

Pachnobia claviformis ♂ Morr. New Hampshire, Morrison.

A note says this is a synonym of *Pachnobia salicarum* Walk.

Setagrotis planiformis ♀ Smith. British Columbia.

A note says this is a synonym of *Noctua vocalis* Grt.

Peridroma grandipennis ♂ Grt. Hot Springs.
Peridroma tenuescens ♂ Smith. Nebraska, Morrison.
Noctua clemens ♂ Smith. California.
Noctua invenusta ♀ Grote.

This is a synonym of *Noctua vocalis* Grt., which was rechristened *Setagrotis planiformis* by Smith. Thus Grote named it twice, and Smith once, verily quite a baptism.

Chorizagrotis terrealis ♀ Grt. Hot Springs.
Rhizagrotis proclivis ♀ Smith. Arizona, Morrison.

Smith's check list credits this name to Morrison, but the type label is in Smith's writing, and bears his name. Mr. Doll considers *proclivis* to be a synonym of *acclivis.* The type of *proclivis* is a ♀, while *acclivis* is represented in the collection by ♂ ♂, which were taken at the same time by Mr. Morrison. Mr. Doll has recently received specimens from same locality, taken at the same time, and all of the males are of the form *acclivis*, while all of the females are *proclivis.* This seems significant.

Rhizagrotis albicosta ♂ (♀) Smith. Arizona, Morrison.
Rhizagrotis apicalis ♂ Grt. California.
Feltia longidens ♂ (♀) Smith. New Mexico.
Feltia stigmosa ♂ (♀). Cambridge, Mass., Morrison.

A note declares this to be a synonym of *Feltia volubilis* Grt.

Porosagrotis satiens ♂♀ Smith. N. W. British Columbia.
Porosagrotis dollii ♂♀. Arizona, Doll.
Carneades neomexicana ♂♀ Smith. New Mexico.
Carneades niveilinea ♂♀ Grt. Arizona, Doll.
Carneades insertans ♂ Smith. British Columbia.
Carneades brevipennis ♂ (♂♀♀) Smith. Nevada.

A type ♂ is also in the Doll collection.

Carneades oblongostigma ♀ Smith. Montana.
Carneades flavidens ♀ Smith. Arizona, Doll.
Carneades perexcellens ♀ Grt.
Carneades infelix ♂ Smith.

The types of *perexcellens* and *infelix* are both present. They are synonyms.

Carneades cogitans ♂♀ Smith. California.
Carneades atristrigata ♂ Smith. British Columbia.
Carneades atomaris ♂♀ Smith. California.
Carneades moerens ♂ (♀) Grt. Arizona, Doll.
Carneades muscosa ♀ Grt. Colorado.

This is a synonym of *cœnis* Grt.

Carneades xyliniformis ♀ Smith. New Mexico.
Carneades conjuncta ♂ (♂♀) Smith. New Mexico.
Carneades teleboa ♀ Smith. New Mexico.
Carneades murdockii ♂ (♀) Smith. British Columbia.
Carneades fernaldi ♀ Morr. Maine, Morrison.
Carneades tristicula ♂ Morr. Maine, Morrison.
Carneades basiflava ♂ (♂) Smith. British Columbia.
Carneades spectana ♀ Smith. California.
Carneades furtivis ♂♀ Smith. California.

Agrotiphila rigida ♀ Smith. Colorado, Bruce.
Agrotiphila colorado ♀ Smith. Colorado, Bruce.
Eutolype depilis ♀ Grt. Ohio.
Barathra occidenta ♂ (♀) Grt. Type from Hot Springs; ♀ from Adirondacks.

Smith's check list gives this *occidentata*, but *occidenta* is the reading on type label.

Mamestra gnata ♂ Grt. Arizona, Doll.
Mamestra prodendiformis ♂ (♀) Smith. Arizona, Morrison.
Mamestra hadeniformis ♂ Smith. Colorado, Bruce.
Mamestra trifolii var. *oregonica* ♂ (♀) Grt. California.
Mamestra glaciata ♂ Grt. Arizona.
Mamestra bella ♀ Grt. New Jersey.

A note says that this is a synonym of *Mamestra ectypa* Morr.

Mamestra spiculosa ♂ Grt. Arizona, Doll.
Mamestra incurva ♂ (♂) Smith. Arizona, Doll.
Mamestra longiclava ♂ Smith. Colorado, Bruce.
Mamestra vittula ♂ Grt. Hot Springs.

This name occurs twice in Smith's check list, once under *Mamestra* numbered 1894, and again at the end of that species, but below the asterisks, which I believe means that its proper place is doubtful. Here it is numbered 1954.

Scotogramma submarina ♂♂ ♀ Grt. Montana.

The type label calls this an *Anarta*.

Ulolonche orbiculata ♂ Smith. Colorado, Bruce.

This name also appears in Smith's list under *Mamestra*.

Ulolonche dilecta ♂ Hy. Edw. Arizona, Doll.

The type label reads *Perigea*, but Mr. Neumoegen places it here, though with a (?).

Hadena perpensa ♂ Grt. Arizona, Doll.
Hadena transfrons ♂ Neum. British Columbia.
Hadena chryselectra ♂ (♂ ♀) Grt. Arizona, Doll.

This is a synonym of *Perigea benigna* Hy. Edw.

Hadena smaragdina ♂ Neum. Arizona, Morrison.
Hadena misera ♀ Grt. Arizona, Morrison.

With only a part of one antenna remaining this poorly spread, lonely representative of a species, seems admirably named.

Pseudanarta falcata ♂ Neum. Arizona, Morrison.

This is probably a *Heliothis*.

Oligea grisea ♀ Grt. Arizona, Doll.

This was omitted from Smith's check list.

Perigea loculosa ♂ (♀) Grt. Arizona, Doll.
Perigea periplexa ♂ ♀ (♀) Grt. Arizona, Doll.

Perigea pulverulenta ♀ (♂♂♀) Smith. Arizona, Doll.
Perigea dilecta ♂ Hy. Edw. Arizona, Doll.
Perigea benigna ♂ Hy. Edw. Arizona, Morrison.

This is a synonym of *Hadena chryselectra.*

Homohadena inconstans ♂♀ Grt. Arizona, Doll.
Homohadena epipaschia ♂ Grt. Hot Springs.
Homohadena vulnerea ♂♂ Grt. Arizona, Doll.
Oncocnemis umbrifascia ♂ (♀) Smith. British Columbia.
Oncocnemis levis ♂ (♂♀♀) Grt. Colorado, Doll.
Oncocnemis pernotalis ♀ Grt. Arizona, Doll.

Smith's check list calls this *pernotata*, but the type is labeled *pernotalis.*

Oncocnemis extremis ♀ Smith. British Columbia.
Oncocnemis major ♂ (♀) Grt. Colorado.
Oncocnemis curvicollis ♂♀ Grt. Arizona, Doll.

Smith's check list declares that *major* and *curvicollis* are synonyms, but judging by superficial characters they seem to be quite distinct.

Oncocnemis griseicollis ♀ Grt. Arizona, Doll.
Hadenella pergentilis ♂ Grt. No locality label.
Trichopolia dentatella ♂ Grt. Arizona, Doll.
Trichopolia ptilodonta ♂ Grt. Arizona, Doll.
Eupolia licentiosa ♂ Smith. Utah.

This is a type of a new genus, Smith, as well as new species Smith, though I cannot find it in his catalogue, Bulletin 44. Possibly it has been described since that publication.

Polia cædeon ♂ Grt. California.
Polia contadina ♂ Smith. British Columbia.

———o———

THE EFFECT OF MUSIC UPON SPIDERS.

Illustrative of the singularly pleasurable effect of music upon spiders, in the *Histoire de la Musique et de ses Effets*, we find the following relation:

"Monsieur de ———, captain of the Regiment of Navarre, was confined six months in prison for having spoken too freely of M. de Louvois, when he begged leave of the governor to grant him permission to send for his lute to soften his confinement. He was greatly astonished after four days to see, at the time of his playing, the mice come out of their holes, and the Spiders descend from their webs, who came and formed in a circle round him to hear him with attention. This at first so much surprised him, that he stood still without motion, when having ceased to play, all those Spiders retired quietly into their lodgings; such an assembly made the officer fall into reflections upon what the ancients had told of Orpheus, Arion and Amphion. He assured me he remained six days without again playing, having with difficulty recovered from his astonishment, not to mention a natural aversion he had for this sort of insects, nevertheless he began afresh to give a concert to these animals, who seemed to come every day in greater numbers, as if they had invited others, so that in process of time he found a hundred of them about him. In order to rid himself of them he desired one of the jailors to give him a cat, which he sometimes shut up in a cage when he wished to have this company and let her loose when he had a mind to dismiss them, making it thus a kind of comedy that alleviated his imprisonment. I long doubted the truth of this story, but it was confirmed to me six months ago by M. P———, intendant of the duchy of V———, a man of merit and probity, who played upon several instruments to the utmost excellence. He told that being at ———, he went into his chamber to refresh himself after a walk, and took up a violin to amuse himself till supper time, setting a light upon the table before him; he had not played a quarter of an hour before he saw several Spiders descend from the ceiling, who came and ranged themselves round about the table to hear him play, at which he was greatly surprised, but this did not interrupt him, being willing to see the end of so singular an occurrence. They remained on the table very attentively till somebody came to tell him that supper was ready, when having ceased to play, he told me these insects remounted to their webs, to which he would suffer no injury to be done. It was a diversion with which he often entertained himself out of curiosity." (*Hist. de la Mus.* i, 321)

The Abbé Olivet has described an amusement of Pelisson during his confinement in the Bastile for refusing to betray to the government certain secrets intrusted to him by a friend who was a leading politician at the court of Louis XIV, which consisted in feeding a Spider which he discovered forming its web across the only air-hole of his cell. For some time he placed his flies at the edge of the window, while a stupid Basque, his sole companion, played on a bagpipe. Little by little the Spider used itself to distinguish the sound of the instrument, and issued from its hole to run and catch its prey. Thus calling it always by the same sound, and placing the flies at a still greater distance, he succeeded, after several months, to drill the Spider by regular exercise, so that at length it never failed appearing at the first sound to seize on the fly provided for it, at the extremity of the cell, and even on the knees of the prisoner. To this account, in the "History of Insects," printed by John Murray, 1830, i, 269, is added: "The governor of the Bastile hearing that this unfortunate prisoner had found a solace in the society of a Spider, paid Pelisson a visit, desiring to see the manœuvres of the insect. The Basque struck up his notes, the Spider instantly came to be fed by his friend, but the moment it appeared on the floor of the cell, the governor placed his foot on its body and crushed it to death."

At a ladies' school at Kensington, England, an immense species of Spider is said to be uncomfortably common, and that when the young ladies sing their accustomed hymn or psalm before morning and evening prayers, these Spiders make their appearance on the floor, or suspend overhead from their webs in the ceiling, obviously attracted by the "concord of sweet sounds." —*Cowan's Curious Facts in the History of Insects.*

———o———

MORE ABOUT THE RED BUG.

By ANNIE TRUMBULL SLOSSON.

On the eve of my departure for Florida I received the January NEWS, and read Dr. Hamilton's interesting paper on the Red Bug. As soon as I saw the title I knew that I ought to close the magazine and forego the pleasure of perusal. But there was a horrible fascination in the theme and I read on to the bitter end. I have known little peace of mind since then. An absence of eight months from Florida had somewhat dulled the memory of certain agonizing experiences there, but this article has revived them all, I wish the good doctor had been correct as to my immunity from the little scarlet pests, but he is sadly mistaken; I have known them long and intimately. That I have not made mention of them in my occasional papers is owing to the dislike I feel to dwelling upon painful topics. But I can vouch for the truth of all the learned doctor says of this little fiend. Its diving, head first, into a sweat pore, its subsequent decease there, and the unhappiness ensuing, are described with painful accuracy. As for the remedies spoken of I have tried them all, and many more but with little benefit. Residents assure me that kerosene rubbed over the body just as soon as the tickling sensation shows the presence of the bugs will kill the little pests and prevent further trouble. I have not tried this, but I have seen excellent results from certain heroic treatment. One of my friends always resorts to the knife. He cuts open the swelling or pustule, and takes out its contents, perhaps removing the bug itself, but of this I am not sure. It is a severe remedy, but certainly seems to shorten the period of discomfort. A darkey told me that rubbing a piece of salt pork on the "rising"—his name for the swelling—was a sure cure.

Two years ago I captured some of these tiny creatures on my arm and examined them closely; then I put them into alcohol with some spiders and ticks I had collected for Mr. Banks. I omitted telling him what they were and they appeared in the list he returned simply as *Trombidium* sp. (young). My own opinion is that there are several species included under the popular name of Red Bug and having the same unpleasant habits.

I am now en route to South Florida, but I sincerely hope that I may have no opportunities for investigating this matter. I gladly leave all discoveries in the life-history of this young Arachnid to others.

This subject is too serious to put into verse, as Dr. Hamilton suggests, or I might try my hand at something like this:

I sing of the Red Bug,
You know that this said bug
Doth e'en as a dead bug
Sting, tease and inflame;
A sweat pore doth enter
And dive to the centre,
There, flat on its venter
It dies, but dies game,
For it gives up the ghost
At expense of its host.
It's far beyond telling
Save by groaning or yelling—
The itching and swelling,
The burning and heat,
From your head to your feet,
Which this little Arachnid—
Nay, the subject 's too hackneyed,
    I must stop it
    And drop it.

ERRATA.

In Dr. Hamilton's article page 2, last NEWS, line 14 from bottom, for longer *read* wider; also line 2 from bottom for dissolving *read* disrobing.

ZOOLOGICAL RECORD.

The amount of entomological work recorded in the present volume is apparently greater than that of any previous year, the titles numbering 1173 against 1069 last year. We have, however, to record but little extensive systematic work on any group of Insects. Handlirsch's monograph of the Hymenopterous genus *Bembex* being, perhaps, the most important work dealing with Insects of all the world. Brauer and Bergenstamm's tables of some Calyptrate Muscidæ have been completed. A large number of new species have been described in faunistic works; Godman and Salvin's great work on Central America continues to occupy a predominant position in this respect. Berthoumien has commenced a work on the Ichneumonidæ of Europe, a subject that has been treated hitherto in a very piece-meal style. Three volumes of Dalla Torre's Catalogue of Hymenoptera have appeared; as well as a second volume of the general Catalogue of Hemiptera. We are glad to find that M. Severin announces his intention of continuing this work, notwithstanding the lamented decease of his co-laborer, M. Lethierry. A great deal of work has been expended on Hamilton's Catalogue of the Coleoptera common to Europe Northern Asia and North America; it is accompanied by tables intended to elucidate the origin of these widely distributed forms, and will be of considerable assistance to those studying geographical distribution in the region it deals with. Leech's work on the butterflies of China and Japan has been completed.

The series of papers by Fox, Uhler, Ashmead, Pergande and Horn—that of the latter being a memoir of considerable extent—makes a very large addition to our knowledge of the Entomology of Lower California, a region that has been heretofore much neglected by entomologists, though of considerable importance. The series of faunistic papers resulting from the work of the W. India Committee has received a remarkable addition in the memoir of Riley, Ashmead and Howard, in which no less than 340 species of parasitic Hymenoptera are recorded from the island of St. Vincent. Large as it may appear, this is far from being the total number to be found there, as certain of the subfamilies still remain to be worked out. It is remarkable that only 6 new genera have been proposed, although 299 new species are described in the paper. In Lepidoptera, on the other hand, the number of new generic names is very large, 170 having been proposed in one paper by Warren.

Hubbard's sketch of the Insects inhabiting the burrows of a tortoise, points out a new field of observation; Wachtl's paper on the larva of "the nun," suggests an important function discharged by some of the hairs; while Blanc has given an elaborate study of the head of a Lepidopterous larva, conveying much anatomical and physiological information. This paper was published in 1891, a periodical devoted to technical rather than to scientific matters, and has only recently come to the Recorder's notice. Hansen's paper on *Hemimerus* shows that enigmatical insect in quite a new aspect, and introduces us to what appears to be a mode of viviparous reproduction previously unknown in Insects. Binet's memoir on the structure of the ventral chain of nerve ganglia is accompanied by experimental observations. C. Janet has given excellent descriptions and figures of the stridulatory organs in one of our common ants. Gonin's lucubration on the metamorphosis of Lepidoptera, and the formation of their wings is interesting, and touches some very important and difficult points.

Considerable attention has been devoted to the anatomy and morphology of the terminal segments of the abdomen and their sexual modifications by Verhoeff, Escherich and Peytoureau. This last memoir includes a summary of the subject, with criticisms and suggestions.

Nassonow has been able to elucidate, to some extent, the very obscure question of the development of Strepsiptera; and Nagel's paper makes a valuable addition to the subject of the senses and sense-organs of Insects. Lowne's comprehensive work on the blow-fly, designed by the author as a résumé of the principles of anatomy, physiology and morphology as applied to Insects, has been completed.

Bateson's work on variation includes several entomological sections, and will be found valuable even by those who are not prepared to become disciples of "discontinuity," until that term shall have received a more definite application.

Plateau has contributed some sensible remarks on the subject of the "protection" of *Abraxas grossulariata*. Redtenbacher's paper on the different kinds of migratory locusts gives information that will be of interest in many parts of the world; it is to be regretted that it should have appeared in an almost inaccessible publication. Wasmann's Catalogue of Myrmecophilous and Termitophilous Arthropods is a very useful work that has involved an enormous amount of labor.

Brongniart's work on early fossil Insects is certainly one of the most valuable of its kind that has ever appeared, if only in consequence of the number and excellence of the illustrations; one of these represents, of the natural size, an insect of over two feet in expanse of wing. The text of this work is in large part devoted to a review of the question as to the origin of wings, and the nomenclature of their nervures. This discussion, however, does not deal with the chief difficulty of the subject, viz., our insufficient knowledge of the histology and development of wings. Scudder's work on fossil Tipulidæ appears to be one of the best monographs that has yet been produced on a special family of fossil Insects.

Last year the Recorder called attention to the insufficient way in which new species and genera are frequently indicated to be such, and he takes this opportunity of alluding to a practice of the opposite kind that appears to be rapidly extending, viz., the publication of descriptions as "new species," or "gen. nov.," although diagnoses or descriptions have previously appeared in some other work. In these cases it is not infrequent that all reference to so important a fact is suppressed. The Recorder will venture to suggest that societies and editors should endeavor to render such a proceeding less feasible than it appears to be at present.—*D. Sharp's Introduction to Insecta, Zoological Record for 1894.*

PICKAPACK.—On the 1st of July last I found a yellow geometrid caterpillar that had, what seemed to be, a bunch of bluish green follicles, just at the bend of the back. This proved to be a batch of larvæ, compressed, and having their nozzles buried in the skin of their victim. In a day or two the caterpillar succumbed, and the larvæ spread themselves over its under parts and drained its remaining juices; they then spun their cocoons. In the beginning of August the perfect flies appeared. Mr. Ashmead kindly identified them for me as specimens of *Euplectus frontalis* Howard. —Rev. THOMAS W. FYLES, South Quebec.

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., FEBRUARY, 1896.

ECONOMIC ENTOMOLOGY.

WE find that many of our subscribers are interested in practical or economic entomology, and we are receiving letters like the following: "If Prof. Smith, in the Economic Department, would put in some articles pertaining to insects that do or are likely to injure the peach and plum especially, they would interest the fruit growers in this locality (Tifton, Ga.)."

Prof. Smith says he will gladly answer any questions that may be asked by farmers and fruit growers, and that they will be answered in his department of the NEWS. He also says he will publish from time to time, articles on insects injurious to peach and plum trees, and also on kindred subjects of interest to the agriculturist and horticulturist.

OWING to illness, Mrs. A. T. Slosson has been ordered by her physician to give up entomological work for a time. Hard and persistent collecting in New Hampshire has had an injurious effect. Mrs. Slosson has done an enormous amount of work in supplying specialists with material and now needs a rest, and the attention of her correspondents is called to this fact. The work covered by Mrs. Slosson has been the entire field of Entomology, and some of us who only study a single order find we have plenty of work on hand, thus showing what her efforts have been.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

(See Editorial, page 45.)

Grasshoppers in Minnesota.—Dr. Otto Lugger has sent us a very interesting account of his operations against the migratory grasshoppers in his State, the essential points of which are as follows: Very early in July letters were received from Taylor Falls, Minn., in which it was stated that great damage was being done by grasshoppers, and that farmers in that region feared to lose their entire crops. After consulting with the proper authorities it was agreed that steps should be taken to assist the farmers against this insect, that all possible means should be employed to prevent the pest from extending over a larger area than already occupied. It was found that a space from 36 to 40 square miles was more or less badly infested with grasshoppers; in some places the ground was perfectly black with them, while in others near by but few could be detected. This showed that the young were still in the vicinity of the place in which they were born. The damage at that time was slight, as apparently only pasture land had yet suffered; but the young hoppers were moving towards Timothy and grain fields, so that no time was to be lost. It was concluded to utilize "hopper-dozers" and kerosene oil, as no other remedies could well be applied at that late period. Consequently 230 hopper-dozers were made and operated near Taylor's Falls, Rush City and Duluth, which required in all 95 barrels of kerosene oil. Besides this, smaller amounts were bought at the beginning of the work, in all about ten barrels, and in some cases the farmers also furnished some oil. The hopper-dozers were made as follows: A piece of ordinary sheet iron such as is used for stove pipes was turned up 1½ inches around the edge and riveted at the corners. This made a shallow pan about 8 feet long, 2 feet broad and 1½ inches deep. To the bottom of this were riveted six small strips which could be fastened to the three runners on which the pan rested. At the rear of the pan was screwed a light wooden frame as long as the pan and 1½ feet high over which canvass was stretched. This frame has the important office of throwing back into the oil all those grasshoppers that would otherwise jump clean over the pan. The runners were usually made from sapplings, or small pieces of board curved upward in front to prevent them from catching in the ground. The front ends of the runners were fastened by screws to a cross piece which was drawn in turn by two ropes; one at each end. These ropes were joined in front and fastened to a single tie. Sometimes two hopper-dozers were fastened to a long pole by means of short ropes and this was very easily drawn by one horse. Just in front of the pan was fastened a piece of rope which swept the ground a few inches in advance and served to stir up the hoppers to jump into the pan. In the pan was also a piece of cloth thoroughly saturated with water and about a pint of kerosene was then thrown in, the upright backing of canvass being also moistened with oil. The machine was then drawn slowly over the pastures where the hoppers were thickest, and in a short time it was partially filled with dead and dying insects. The slightest touch of kerosene either from the pan or the canvass sheet means death to the hopper, for the oil spreads over his body as a single drop does over a large surface of water. It seems to produce a paralysis, which is first shown by the stiffening of the legs. A very large proportion of the hoppers that come into contact with the oil in the pan immediately jump out again, but they invariably die in the course of a few seconds or minutes. The nature of the ground in the infested region did not in many places admit of using more than one hopper-dozer at a time. The farmers watched with great interest the operation of the first few hopper-dozers, coming from far and near for that purpose, and when they saw the possibilities of these simple machines they were not slow to realize that by faithful work they could largely protect their very promising crops. Generally speaking, the farmers showed a very commendable spirit to fight their enemy and they went to work with a will. Yet notwithstanding all this, the grasshoppers would have done a vast amount of damage if the climatic conditions had not been very favorable to the farmer. At the time when the grasshoppers are most voracious, and when they usually move about in large armies from field to field, a great number of light rains fell at short intervals, assisting the plants most wonderfully in their growth, while greatly damping the ardor of such warmth loving insects as the grasshoppers, which are not fond of moisture. These rains helped the plants and retarded the growth of the grasshoppers. Later, when these rains ceased to fall, the rye, oats and wheat were so close and rank that the ground was thoroughly shaded and retained the moisture for a long time. This condition of the grain fields was not at all to the liking of the grasshoppers; they wandered about the edges of such fields, but did not enter. Only in cases where the growth was poor, or the stand of grain irregular, did they enter or cause damage; chiefly to the oats. As a general rule, however, the grain escaped unhurt; and only pastures, meadows and some old Timothy fields suffered. This state of affairs assisted farmers greatly in fighting the enemy, as they did not have to use the machines in the grain itself, but only along the borders. Immense numbers of grasshoppers were killed before they caused much damage. How many were killed by a hopper-dozer is difficult to say, as 9 out of 10 that jump into it jump out again, only to die soon after in the field; but if only 5 or 6 bushels of the small grasshoppers are swept off the dozer during a day's labor, this would mean 50 to 60 bushels killed by a single machine. This is by no means an exaggerated estimate, but if only 10 per cent. of this amount were killed it would well pay for the work. Kerosene has this additional advantage: it leaves a strong odor behind, which is very apt to spoil the appetite of the grasshoppers which escape destruction and which drives them away to less heavily scented pastures. As this oil kills plants as well, proper care in handling must be had, otherwise much injury can be caused by careless work.

Hopper-dozers, though very good machines upon level ground cannot be used in all places. Some farmers living upon newly cleared land managed their machines very ingeniously. Instead of moving the hopper-dozers, they drove the hoppers themselves into the pan which in this case was used in the same way as a coral is used to capture cattle or horses. Though much slower they still succeeded in killing the greater number of their enemies and saved their crops.

But after all, no matter how useful hopper-dozers may be against grasshoppers, they are only a make-shift to be employed when other remedies can no longer be employed. In many places they cannot be used at all—for instance the hill-sides of Duluth upon which immense numbers of grasshoppers have found a home. Here other remedies might be used to capture the grasshoppers in bags, and in which the insects are ground up by rollers. Poison could also be applied where cattle or chickens can be kept away. The true remedy consists in plowing, as has been shown before, and wherever grasshoppers are numerous this method must be resorted to. Of course it would be best to plow the soil containing eggs during the Autumn, as by so doing the surface of the plowed ground becomes thoroughly compacted by rain and snow. Plowing in Spring, if well done and as early as possible, will also be successful, though in most cases a few grasshoppers may succeed in reaching the surface.

In regard to the "Rocky Mountain Locust," it is possible that a small swarm of this destructive species has again settled in our State. At least it was stated in some newspapers published in the Red River Valley that a swarm had been observed, some time during the middle of August, flying in a southeasterly direction over Polk County. Inquiry failed to decide positively whether they had settled in our State or not. If they have they will be found south of Crookston, and farmers located in that region should watch carefully and give timely warning of their presence so that steps can be taken to prevent their increase.

INASMUCH as *Anthonomus grandis* Boh. has now thoroughly established itself as a member of the south Texan fauna, collectors of American Coleoptera will naturally be glad to get specimens. We have now in the Department of Agriculture a large series, and will be glad to send specimens to Coleopterists.—L. O. HOWARD, United States Department of Agriculture, Division of Entomology, Washington, D. C.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

WE call the attention of our readers to the journal devoted to wild flowers (see advertising column), botany and the higher branches of general gardening, edited by Prof. Thomas Meehan, the well-known horticulturist and Pennsylvania State Botanist. The publication is beautifully illustrated, and should be in the hands of all lovers of flowers and plants.

PICTURES for the album of the American Entomological Society have been received from Mrs. Annie Trumbull Slosson, W. C. Wood, George A. Ehrmann, J. M. Aldrich, C. S. McKnight, H. C. Fall, G. R. Pilate and Dr. John Hamilton. This is the most interesting collection of the pictures of entomologists in the world, and was started thirty-five years ago. Remember, we wish the pictures of all persons interested in entomology. It is not necessary to have published anything, as we want the pictures of "little bugs" as well as the so-called "big" in bugology.

A VISIT TO CAMBRIDGE.—Some months after the death of Dr. LeConte I considered it a duty to assist in fulfilling his will by suitably preparing his cabinet and transporting it to the Museum at Cambridge. Annually, since, I have made one or two visits for the more accurate study of its types after a thorough study of my own material had been completed. In that collection I find not only the bare facts, for which I seek, but much besides. In the more than thirty years of our association there is not a box which has not been before us the topic of discussion or for consultation. Every one recalls its memories, and even particular specimens recall incidents of interest. To me such a visit is therefore more than the comparison of specimens, it puts me again in touch with a friend.

A visit in December last found the collection in excellent condition, and the careful custodian, Mr. Henshaw, is rapidly arranging the specimens in a neater manner, the types defined, and, in those cases in which types are in other cabinets, specimens have been obtained through our united efforts, so that very few remain unrepresented.

The means for the preservation of the specimens from danger arising within are as perfect as it is possible to have them, and at the same time hold the specimens accessible for study. All museums are at times liable to have specimens stolen, but it is to be hoped that no one who studies that collection *will* be found so devoid of honor as to rob it.

I regret greatly that many of the traditions of the collection are known only to me. Frequently specimens have something about them indicating their origin and types from Chaudoir, Mannerheim, and others, even including Dejean, may be known thereby. As many of these traditions concern individual specimens it is hardly possible to give any general data. In a collection of the character of that of LeConte it is important that no label attached to a pin, however unimportant it may seem, should be removed.—GEO. H. HORN.

EWLIN, in his book of Travels in Turkey, has recorded a singular tradition of the history of the Flea and its confraternity, as preserved among a sect of Kurds, who dwelt in his time at the foot of Mount Sindshar. "When Noah's Ark," says the legend, "sprung a leak by striking against a rock in the vicinity of Mount Sindshar, and Noah despaired altogether of safety, the serpent promised to help him out of his mishap if he would engage to feed him upon human flesh after the deluge had subsided. Noah pledged himself to do so; and the serpent coiling himself up, drove his body into the fracture and stopped the leak. When the pluvious element was appeased, and all were making their way out of the ark, the serpent insisted upon the fulfillment of the pledge he had received; but Noah, by Gabriel's advice, committed the pledge to the flames, and scattering its ashes in the air, there arose out of them Fleas, Flies, Lice, Bugs, and all such sort of vermim as prey upon human blood, and after this fashion was Noah's pledge redeemed."—*Hist. of Ins.* (Murray, 1838) ii, 312.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be **limited to twenty-five** for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the anatomy of insects, however, whether relating to American or exotic species will be recorded.

1. BULLETIN OF THE ILLINOIS STATE LABORATORY OF NATURAL HISTORY, vol. iv.—On the entomology of the Illinois River and adjacent

waters, C. A. Hart. Description of three new parasitic Hymenoptera from the Illinois River, W. H. Ashmead.

2. OHIO AGRICULTURAL EXPERIMENT STATION, BULLETIN 62.—The grape root worm, *Fidia viticida* Walsh, F. M. Webster.

3. DEUTSCHE ENTOMOLOGISCHE ZEITSCHRIFT HERAUSGEGEBEN VON DER DEUTSCHEN ENTOMOLOGISCHEN GESELLSCHAFT, 1895, Heft 2.—*Pœcilophana* nov. gen., Cetonidæ, erected for *Cetonia ochroplagiata* Heller, G. Kraatz. On termitophilous Cicindelidæ, E. Wasmann. Review of the species of the Coleopterous genus *Magdalis* Germ. known to me, E. Reitter. *Epiphanops* nov. gen., Curculionidæ, E. Reitter. Review of the species of the Coleopterous genus *Strophomorphus* Seidl. known to me, E. Reitter. Review of the species of the Coleopterous genus *Pholicodes* Schönh. known to me, E. Reitter. On some new species of the Melonthid genus *Dicrania* Serv., G. Kraatz. New Chrysomelidæ, with synonymical remarks, J. Weise. New species of Cicindelidæ, W. Horn. On the Carabid genus *Imaibius* Bates, G. Kraatz. New species of exotic Cetonidæ, G. Kraatz. *Argyrophegges* nov. gen., Goliathidæ, G. Kraatz. *Acanthovalgus* nov. gen., Valginidæ, G. Kraatz.

4. THE CANADIAN ENTOMOLOGIST, xxvii, 12.—The plum-twig gall-mite, M. V. Slingerland. Partial preparatory stages of some moths, G. H. French. Curious behavior of *Eudamus pylades* larva, H. H. Lyman. Note on *Aphilanthops*, C. F. Baker. The larvæ of North American saw-flies, H. G. Dyar. Two new *Crocotas* found in western Pennsylvania, G. A. Ehrmann. The life-history of *Pamphila manitoba* Scudder, F. W. Fyles. Note on the setæ of the larvæ of Thyatiridæ and a correction, H. G. Dyar. A new genus and species in the Aphelininæ, L. O. Howard.

5. ANATOMISCHER ANZEIGER, xi, No. 11.—The tracheal end-ramifications in the spinning glands of Lepidopterous larvæ, E. Holmgren.

6. ANNALES AND MAGAZINE OF NATURAL HISTORY, No. 96.—New genera and species of Phyralidæ, Thyrididæ and Epiplemidæ, W. Warren. •Australian entomophytes, or entomogenous fungi, and some account of their insect hosts, A. S. Olliff.

7. SITZUNGSBERICHTE DER NATURFORSCHENDEN GESELLSCHAFT ZU LEIPZIG, 1892-1894.—New exotic Hymenoptera of the family Ichneumonidæ, Kriechbaumer.

8. ARCHIV FUR NATURGESCHICHTE, Berlin, 61 Jahrgang, 1 Band, 2 Heft.—The male sexual organ of *Vespa germanica*, H. E. Kluge. Comparative morphological researches on the abdomen of the Endomychidæ, Erotylidæ and Languriidæ (in the old sense), and on the muscling [Muskulatur] of the sexual apparatus of *Triplax*, C. Verhoeff.

9. BULLETIN OF THE CORNELL UNIVERSITY AGRICULTURAL EXPERIMENT STATION, No. 104.—Climbing cutworms in western New York, M. V. Slingerland.

10. PROCEEDINGS OF THE CALIFORNIA ACADEMY OF SCIENCES (2), vol. v, pt. 1.—On the power of adaptation in insects, H. H. Behr. Some Mexican Neuroptera, N. Banks. Some parasitic Hymenoptera from Baja California and Tepic, Mexico, W. H. Ashmead. The California Phryganidian (*Phryganidia californica* Pack.), V. L. Kellogg and F. J. Jack. Explorations in the Cape Region of Baja California in 1894 . . . , G. Eisen. [Other entomological articles contained in this volume were noted previously].

11. TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON, 1895, part 4.—On a probable explanation of an unverified observation relative to the family Fulgoridæ, W. L. Distant. Contribution towards the history of a new form of larvæ of Psychodidæ (Diptera), from Brazil, F. Müller. Remarks on the homologies and differences between the first stages of *Pericoma* Hal., and those of the new Brazilian species, C. R. Osten Sacken. Supplementary notes on Dr. Fritz Müller's paper on a new form of larvæ of Psychodidæ (Diptera) from Brazil, A. E. Eaton. New species of North American Tortricidæ, Lord Walsingham.

12. MISSISSIPPI AGRICULTURAL AND MECHANICAL COLLEGE EXPERIMENT STATION, BULLETIN, No. 36.—Insects injurious to corn, H. E. Weed.

13. THE ENTOMOLOGISTS' RECORD AND JOURNAL OF VARIATION, London, vii, 6.—The "Basket Caterpillar" and "Bagworm," J. W. Tutt.

14. TRANSACTIONS OF THE AMERICAN ENTOMOLOGICAL SOCIETY, xxii, pt. 4.—Catalogue of the Coleoptera of southwestern Pennsylvania, with notes and descriptions, J. Hamilton.

15. THE AMERICAN NATURALIST, January, 1896.—On the girdling of elm-twigs by the larvæ of *Orgyia leucostigma*, and its results, J. A. Lintner.

16. Notes from the Leyden Museum, xvii, Nos. 1-3.—On a new species of the family Cicindelidæ from Argentina, W. Horn. Description of two new Brenthidæ, A. Senna. New digger-wasps in the collection of the Leyden Museum, A. Handlirsch.

17. BIOLOGIA CENTRALI-AMERICANA, Zoology, pt. 125.—Coleoptera, vol. iii, pt. 1, pp. 377-400, pl. 17, G. C. Champion. Coleoptera, vol. vii, pp. 209-216, H. S. Gorham. Hymenoptera, vol. ii, pp. 369-376, P. Cameron. Lepidoptera-Rhopalocera, vol. ii, pp. 401-416, pl. 87, F. D. Godman and O. Salvin. Lepidoptera-Heterocera, vol. ii, pp. 249-272, pl. 63, H. Druce. Rhyncota-Homoptera, vol. ii, pp. 113-120, W. W. Fowler.

18. PSYCHE, a journal of Entomolgoy, January, 1896.—Notes on the Acrididæ of New England,—ii, Tryaxilinæ i, A. P. Morse. The Arctic Lymantriid larva from Mt. Washington, N. H., *Dasychira rossii* Curt., H. G. Dyar. Notes on the species of *Exorista* of Temperate North

America, C. H. T. Townsend. Note on *Smerinthus cerysii* Kirby, F. L. Harvey.

19. PROCEEDINGS OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, 1895, pt. 3 [Extract].—Synopsis of the North American species of *Gorytes* Latr., W. J. Fox.

20. UNIVERSITY OF TENNESSEE AGRICULTURAL EXPERIMENT STATION, BULLETIN viii, 4.—The Chinch Bug, C. E. Chamblis.

21. DEUTSCHE ENTOMOLOGISCHE ZEITSCHRIFT HERAUSGEGEBEN VON DER GESELLSCHAFT IRIS ZU DRESDEN, Jhg., 1895, 2es lepidopterologisches Heft (Iris, Dresden, Bd. viii, H. 2).—Descriptions of new Lepidoptera from Tibet, O. Staudinger. On Lepidoptera from Uliassutai, ibid. New exotic butterflies, ibid.

22. ENTOMOLOGISCHE NACHRICHTEN, xxi, Heft 23 and 24.—Ethiopian Heterocera, ii, F. Karsch. Corrections on species of *Agrias*, O. Staudinger.

23. Report of the Secretary of Agriculture, 1895.—The Mexican cotton boll weevil. The San José scale. Appearance of insect pests.

24. ZOOLOGISCHE JAHRBUCHER. ABTHEILUNG F. SYSTEMATIK, GEOGRAPHIE UND BIOLOGIE DER THIERE, ix, 1.—On the morphology and physiology of the ovaries of the worker-ants, E. E. Bickford.

25. ZEITSCHRIFT FUR WISSENSCHAFTLICHE ZOOLOGIE, 60 Bd., 3 H.—The double-spermatozoa of the Dytiscidæ, E. Ballowitz.

26. LE NATURALISTE CANADIEN, xxii, 12.—The last descriptions of l'Abbe Provancher (cont.), Hymenoptera.

27. ANNALES OF THE NEW YORK ACADEMY OF SCIENCES, viii, 6–12.—The Arachnida of Colorado, N. Banks. Coleopterological Notices, vi, T. L. Casey.

28. JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY, December, 1895.—The life-histories of the New York slug caterpillars, H. G. Dyar. On the probable origin, development and diffusion of North American species of the genus *Diabrotica*, F. M. Webster. Final note on the Platypterygidæ, A. R. Grote. A new *Datana*, H. G. Dyar. Schrank's genera, A. R. Grote. Early stages of some Bombycine caterpillars, A. S. Packard. Preliminary Handbook of the Coleoptera of Northeastern America (cont.), H. F. Wickham. Correction of a misidentification—*Attacus splendidus*, H. G. Dyar. Egg-capsules of *Chrysochus auratus* (Fab.), J. L. Zabriskie.

29. REVIEW. There has recently appeared from the press of MacMillan & Co. (London and New York) Volume V of the Cambridge Natural History series with the modest title of "Peripatus, etc." which certainly deserves the careful perusal of all students of the articulata.

The book begins with a scheme of classification (to be continued in a succeeding volume) giving the most recent results of taxonomic study, extremely useful to those whose restricted special studies make it difficult to keep in touch with all that is being done on lines unrelated to their own work.

Peripatus, which serves as a title for the volume, occupies but twenty-six pages, is well-nigh exhaustively treated. The discussion of its Arthropod affinities seems conclusive, and the anatomical details, embryology, habits and the complete bibliography leave very little to be desired.

Chapter ii, treating of the Myriapoda, will be read with greater interest by our students from the fact that we have them abundantly about us.

Beginning with chapter iii, Dr. David Sharp enters on a discussion of the Insecta.

In the treatment of the details of the Insecta many widely scattered facts are brought together and discussed. Fortunately, prolixity has been avoided, a difficult point to attain with such an extensive knowledge of detail and the tendency to seek reasons for, or causes of, modification which Dr. Sharp has so often shown.

The Aptera are briefly treated in chapter viii, of great interest in many ways, but difficult of study from the fragility of many of the species.

The Orthoptera occupy chapters viii to xiv, and the Neuroptera xv to xxi, and give, in a summary manner, the accepted arrangements of the families composing those two orders.

The next two chapters treat of the Hymenoptera.

The volume concludes with an abundant index, without which a book of this character suffers greatly.

To the naturalist, whether teacher or student, the entire series of which this volume forms a part, has great value, and the general reader will find an abundance of interesting and easily assimilable information.—G. H. H.

INDEX TO THE PRECEDING LITERATURE.

The number after each author's name in this index refers to the journal, as numbered in the preceding literature, in which that author's paper is published; * denotes that the paper in question contains descriptions of new North American forms.

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French 4, Lyman 4, Ehrmann 4*, Fyles 4, Dyar 4, 18, 28 (three)*, Holmgren 5, Warren 6*, Slingerland 9, Kellogg and Jack 10, Walsingham 11*, Tutt 13, Godman and Salvin 17*, Druce 17*, Harvey 18, Staudinger 21* (three), 22, Karsch 22, Grote 28 (two), Packard 28.

HYMENOPTERA.

Ashmead 1*, 10*, Baker 4*, Dyar 4, Howard 4*, Kriechbaumer 7, Kluge 8, Handlirsch 16, Cameron 17*, Fox 19*, Bickford 24, Provancher 26*.

ECONOMIC ENTOMOLOGY.

Webster 2, Slingerland 9, Weed 12, Linter 15, Chamblis 20, Howard 23 (three).

Doings of Societies.

PHILADELPHIA, Jan. 14, 1896

A stated meeting of the Feldman Collecting Social was held at the residence of Mr. H. W. Wenzel, 1509 S. 13th St. Members present: Messrs. Bland, H. W. Wenzel, Boerner, Fox, Castle, Laurent, Trescher, E. Wenzel, Johnson and Schmitz. Honorary member: Dr. Henry Skinner. Meeting called to order at 9 P. M., President Bland presiding. The Secretary and Treasurer read their annual reports, which were, upon motion, accepted as read. The President then made his annual address, reviewing the history of the Social, and it was moved that the same be incorporated in the minutes:

"To-night being the anniversary meeting of the 'Feldman Collecting Social,' another year has been added to its life and history; it has been one in which the members have worked with zeal and determination; looking forward to our monthly meetings with pleasure, vieing with each other in exhibiting their trophies and imparting the knowledge gained in the fields, woods and mountains, in pursuits of their favorite study and pastime.

"The display of specimens has been creditable, showing species captured within a short distance of our city that in former years were obtained for our cabinets from remote sections of the country. I have noticed that species frequently taken in this locality in former years were not among the exhibits made; many that were desirable for cabinet exchanges seem lost to us. I refer to favorites in Coleoptera, such as *Myas coricinus*, *Cychrus*, two species; *Calasoma*, one; *Platynus*, two or three; Elateridæ, two; Lucanidæ, two; most all of the large species in Cerambycidæ are seldom taken; are they becoming extinct? or has the breaking up of their haunts by the tide of improvement in extending the city driven them to sections we have not yet been able to locate; perhaps the collectors in other orders have met with the same results. My own experience in collecting has given me the knowledge that many species which may be widely distributed and are outlined in a geographical fauna and habitat of great extent are very local in a State or even county within that area. In our immediate district the woods are being cut down, as a sequence, the timber feeders are destroyed or driven to new fields; with them we lose their natural destroyers; where have they gone?

"To solve these mysteries I believe is part of the work of the collector; also to know the fauna of his district, making a note of any loss or addition, recording it where it can be used for reference. We do not pretend our Social to be a scientific body, but I do claim it is an auxiliary one to science, obtaining information that is brought forth by field work.

"It has been a great source of pleasure and information to us in having our honorary members meet with us; each is well known to the devotees of Entomology throughout the country, being eminent in their special studies; they have made our meetings attractive; they have joined freely in the conversational part of our meetings in the way of verbal communications, questioning the collector and bringing forth facts which otherwise would not be recorded. They have increased to a great extent the interest in our work by their impromptu remarks on the anatomical differences of genera and species, illustrating them by drawings on the black-board. Seeing we are thus encouraged I feel that the members appreciate the advantage of our Social and will continue individually their efforts to make our meetings pleasant and profitable to each other. I know much has been done; ours appears to be an inexhaustible study, as we advance a fresh mine opens with an enchanting charm to seek further to satisfy the desire for new material and knowledge. In view of the fact that our records are being published by one of the prominent entomological monthlies of the world, we should maintain a high standard of work. That our Social endeavors to hold the favorable position which it now occupies is the desire of your presiding officer."

Dr. Skinner, in reply, complimented the President on his address, stating that on behalf of the honorary members he desired to express their appreciation of the hospitality of the Social, and that they had undoubtedly been benefitted by the transactions at its meetings.

Mr. Laurent stated that he had received a letter from Dr. Rodrigues Ottolengui, inviting the members to attend his first annual sale of insects, which takes place in New York City on January 25th. Mr. Laurent exhibited two specimens of Lepidoptera, *Acronycta afflicta*, from Jamesburg, N. J., and *Hadena burgessi* from Arlington Beach, N. J., which were identified for him by Prof. Smith, and which he states were not before recorded from the State of New Jersey.

Mr. Fox exhibited two nests of *Polistes annularis* collected by Mr. C. W. Johnson at Denison, Texas. The nests were unusually large, one measuring 11 x 6 inches, being larger by far than any nest of the species of the genus *Polistes* heretofore seen by the speaker.

Dr. Skinner spoke of the importance of arranging males on the left hand side and females on the right in the columns in the drawer of the cabinet. Too little attention is paid to the necessity of having females where antigeny or secondary sexual difference is not marked, or does not exist. Females, as a rule, are much harder to get than males, and there is no special effort made to get them where the sexes are alike in markings. If specimens are arranged in the cabinet as above advocated the absence of females will be at once noticed. There is great necessity for having both sexes in many interesting entomological studies, and the speaker hopes the above-mentioned method will be used more generally.

The following officers were elected to serve another year:

President, JAMES H. B. BLAND.
Vice-President, Dr. DAVID M. CASTLE.
Treasurer, H. W. WENZEL.
Secretary, THEO. H. SCHMITZ.

Dr. Skinner extended an invitation to the members, inviting them to hold the next meeting at his residence; so ordered, the secretary being instructed to notify the members previously of the place of meeting. No further business being presented the meeting adjourned to the annex.

THEO. H. SCHMITZ, *Secretary*.

Errata.—In the December minutes the name *C. charis* should be *C. choris*.

The Entomological Section

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF MEETINGS.

NOV. 21, 1895.

A regular stated meeting of the Entomological Section of the Academy of Natural Sciences was held in the Hall, S. W. cor. Nineteenth and Race Streets, this evening, Dr. Geo. H. Horn, director, presiding. Members present: Seiss, Fox, Skinner, Ridings, Liebeck. Associates: Reinick, Gerhard, Castle. Mr. C. Few Seiss stated that he had been experimenting with a captive specimen of *Prionidus cristatus* Linn. in relation to its killing other insects. A red legged grasshopper (*M. femur-rubrum*) struggled violently when first seized, but almost instantly after the beak of the *Prionidus* was inserted its struggles ceased, and in thirty seconds the grasshopper, to all outward appearances, was dead. In the case of a yellow-bear caterpillar, two inches in length, all evidence of life and motion disappeared in thirty-five seconds after seizure by the *Prionidus*.

A business meeting was held December 9th, and the following gentlemen were elected to serve as officers for the ensuing year :

Director, G. H. HORN, M.D.
Vice-Director, C. S. WELLES.
Treasurer, E. T. CRESSON.
Conservator, HENRY SKINNER, M.D.
Secretary, W. J. FOX.
Recorder, HENRY SKINNER, M.D.
Publication Committee, C. W. JOHNSON, J. H. RIDINGS.

Dr. HENRY SKINNER, *Recorder*.

The following papers were read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS :

NOTES ON OXYBELUS, WITH DESCRIPTIONS OF NEW SPECIES.—I.

By CARL F. BAKER, Fort Collins, Col.

All of the species mentioned below belong to that section of the genus having the squama terminating in a strong curved point. The spine is entire in all but the last one, and in all except this is either gradually narrowed to tip or with the sides nearly parallel. These species all have the pleura in front of middle coxa distinctly crested, as in many species of *Crabro*. All have black or piceous mandibles. I have followed Mr. Robertson's method of describing quite closely in order that the descriptions given may be readily and rapidly compared with those in the "Synopsis of N. A. Oxybelus."

Oxybelus cornutus Rob.—Occurs at Fort Collins, throughout August on *Solidago*. Mr. Robertson mentions a male with the mesonotum rufous in front. I have a female which also shows the same peculiarity. The females measure about 10 mm. in length.

Oxybelus rejectus n. sp. ♂.—Head and thorax densely coarsely punctured. Ocelli as in *cornutus*. Tubercle on vertex behind ocelli entirely wanting. Prothorax, scutellum and postscutellum, carinate ; squama arising from posterior lateral edges of postscutellum, produced into long incurved points ; spine long, narrow, sides nearly parallel, tip obtusely rounded. Metathorax reticulate above ; median area triangular, open above, transverse striæ within, below passing into a long median carina; lateral faces striato-punctate, the striæ transverse. Abdomen long triangular, rather strongly constricted between the segments, coarsely punctate, with four pairs of lateral spines; last segment trapezoidal, evenly emarginate at tip. Color black; flagellum dark rufous; silvery pubescence thin on face, sparse on thorax and abdomen. Tegulæ rufous; tubercles, squamæ, widely separated spots on sides of abdominal segments 1-4, and two faint discal spots on segment 5, lemon-yellow. Legs black, small spots at tips of fore and middle femora beneath, and a line on outside of all tibiæ, lemon-yellow; tarsi rufous towards tips. Wings hyaline, nervures quite dark. Length 7 mm.

Fort Collins, August. This species is nearest *cornutus*, with which I at first placed it as a well-marked variety. It, however, shows specific differences as above described.

Oxybelus striatus n. sp. ♂.—Thorax coarsely punctured, on mesothorax more coarsely. Occiput up to back of posterior ocelli coarsely transversely striato-punctate. Face very finely sparsely punctured. Ocelli nearly normal, but showing a tendency towards the position in *cornutus*. Vertex behind posterior ocelli with a distinct median tubercle. Prothorax carinate, sharp angled at the sides. Mesonotum, scutellum and postscutellum, carinate. Posterior margins of mesonotum and scutellum coarsely rugose; squamæ arising from lateral edges of postscutellum, rather suddenly narrowed to a point, which is strongly bent inward. Spine long, narrow, slightly larger towards the tip. Metanotum above reticulated; median area large, triangular, nearly smooth within, tip approximating apex of metanotum and passing into a very short median carina; lateral faces finely transversely striato-punctate. Abdomen broad oval, slightly constricted between the segments, punctures of medium size, rather sparse, especially on discs; with three pairs of lateral spines. Last two segments very coarsely punctured, the last nearly rectangular, gently emarginate at tip. Color black; pubescence of face brownish in certain lights, on rest of body silvery; flagellum deep chocolate. Tubercles, spot on tegulæ, squamæ, tip of spine, and narrow fasciæ on abdominal segments 1-5 (slightly interrupted on 1-4), whitish. Posterior margins of abdominal segments silvery. Legs black; fore tibiæ and all tarsi rufous, stripes on outside of all tibiæ white. Wings hyaline, nervures rufous. Length 6.5 mm.

Fort Collins, August. This species is near *subcornutus* Ckll. Among other differences, however, the scutellum is strongly carinate, and the squamæ are confined to the sides of the postscutellum.

Oxybelus punctatus n. sp. ♂.—Closely related to *striatus*, but differing as follows: Mesothorax closely punctured. Extreme vertex coarsely punctured. Occiput more strongly punctured, the striæ not nearly so distinct; postscutellum rugose, not carinate; squamæ more flaring, points not so strongly incurved; spine tapering very gradually to tip. Abdomen more closely and coarsely punctured.

Fort Collins, August. This species, in color and form, is almost the exact counterpart of *striatus*. But with the material at hand it is impossible to unite them.

Oxybelus 4-notatus Say.—I have a large series of this variable species from Michigan and Colorado. It is common at Fort Collins in August, on *Solidago*. The variety *montanus* Rob. occurs with the typical form.

Oxybelus subulatus Rob.—Specimens collected in Michigan (Agric. College, 6-29-88, on flowers of *Spiræa sorbifolia*) do not differ from the common Colorado form (Fort Collins, August, on *Solidago*). I have one female resembling the variety from Colorado described by Mr. Robertson. This specimen has, however, all of the abdominal bands interrupted, and two yellow spots on the scutellum.

Oxybelus acutus n. sp. ♀.—Head and thorax densely coarsely punctured. Prothorax indistinctly carinate, punctured, rounded at the sides. Mesonotum in front, scutellum and postscutellum carinate; squamæ nearly joining behind, points short not strongly curved; spine very short, but little exceeding the tips of the squamæ, base broad, rapidly narrowing to an acute tip. Metanotum above with polygonal reticulations; median area subtriangular, sides rounded, partly closed above, rugose within, passing below into a short carina; lateral faces coarsely rugoso-punctate. Abdomen ovate, coarsely punctate, strongly constricted between the segments, last segment triangular, very coarsely punctured. Color black; pubescence silvery, except on last two abdominal segments; flagellum deep chocolate. Tubercles, tegulæ, squamæ, two oval spots on segment 1, two transverse spots on segment 2, and narrow continuous bands on segments 3-5, yellowish white; hind margins of abdominal segments 2-5 silvery. Legs black; anterior tibiæ rufous, middle and posterior piceous, all tibiæ with whitish stripes outwardly; tarsi rufous towards tips. Wings hyaline, slightly smoky on distal margins, nervures rufous. Length 6.5 mm.

Foot-hills west of Fort Collins, 6-30-95. This species is nearest *subulatus*. It differs from all known North American species in the extraordinary form of the spine. It may also be separated from *subulatus* by other characters as above described.

Oxybelus cockerellii n. sp. ♂.—Vertex and thorax coarsely, rather closely punctured. Face finely and more sparsely punctured. Occiput transversely striato-punctate, but not strongly so. Vertex with a median tubercle. Prothorax carinate, rather sharp angled at the sides. Mesonotum in front, scutellum and postscutellum, strongly carinate; squamæ arising from basal sides of postscutellum, the rather short points not strongly curved; spine of medium length, narrow at the base, strongly broadened to a thin emarginate tip. Metathorax above with fine oblique carinæ, reticulate at immediate base of spine; median space short and broad, triangular, open above, smooth within, passing below into a long carina: lateral faces finely sparsely punctate, with few indications of striæ. Abdomen ovate, rather finely closely punctate, not strongly constricted between the segments, last two segments very coarsely punctured, the last rectangular and truncate at tip; with three pairs of distinct lateral spines. Color black; pubescence silvery, thick on face, sparse on rest of body, that on face brown in certain lights; flagellum rufous beneath at tips. Tubercles, tegulæ, squamæ, tip of spine and transverse spots on sides of abdominal segments 1-5 (all narrow and widely separated), whitish. Legs black; fore tibiæ and tarsi rufous, all tibiæ with a whitish stripe outwardly; middle and hind tarsi with first joint whitish at base, last joint rufous. Wings hyaline, nervures dark brown. Length 5-7 mm.

Fort Collins in August, on *Solidago.* This species belongs to a group of this section of the genus, which contains but one other species, *cressonii.* It is separated from that species, most noticeably, by the strong scutellar carina, closely punctured abdomen, color of antennæ and mandibles, and larger size. I have dedicated this species to Prof. Cockerell, in recognition of his successful labors in American Hymenopterology.

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A NEW PARASITE.

By H. Anderson Lafler.

During the past season I have studied, somewhat, our commonest "digger wasp" here (De Witt, Neb.) identified as *Bembex nubilipennis.* This species digs burrows about 18 inches in length in the dry, compact earth of roadways, paths and bare places in suitable localities, which they provide with flies upon which the egg is laid.

A seemingly new fact in regard to this species or any of the genus *Bembicum*, is that this species is parasitized by a *Tachina.* Of a large number of burrows which were dug into, all were found to contain in the cavities in which was the larva of the wasp, the larvæ of a *Tachina.* There were from four to twelve in each cavity. They were feeding on the provisions made by the wasp for her own larva. In one instance no larva of the wasp or empty pupa case was found, but the cavity contained eight of the Dipterous larvæ and an abundant supply of food. Pupæ were also found in same place as the larvæ.

Specimens of full grown larvæ which were secured were placed in earth, pupated and gave out the imago in eighteen days between August 18th and September 5th. Of another lot secured on September 5th only one has emerged to date. A specimen was submitted to Prof. S. W. Williston, who was unable to determine the species, it being "in all probability yet undescribed." It belongs to the genus *Prosphorysa*.

No flies resembling these at all were noticed about the holes or wasps, and I do not know how the flies gained access to the larval cavities, as in almost every instance the mouth of the burrow is carefully covered with earth by the wasp both when leaving the hole or remaining in for some time. In the latter case the dirt is pushed up from below, the angle of descent being small, so that the earth does not run down into the hole. The statement that no parasites are known that feed upon provision of flies in the nests of any of the species of the genus *Bembecinus* is upon the authority of Prof. L. O. Howard.

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DESCRIPTION OF A NEW SPECIES OF IDOLOTHRIPS.

By THEO. PERGANDE, Washington, D. C.

Idolothrips coniferarum n. sp.—Length 3.6–4.8 mm. General color black and polished; the head and legs with a faintly bluish, and the prothorax with a slight purplish reflection. Eyes dark brown; ocelli colorless. Antennæ black, with the basal two-thirds of the third, basal half of the fourth and base of the fifth and sixth joints yellow; anterior tibiæ, especially in the male, frequently yellowish brown; tarsi dark brown to black; sutures of the abdomen, if extended, dark red. Wings clear and colorless, the veins and a short streak at base of costa of front wings brownish or blackish; fringes dark brownish. Head about three times as long as broad, cylindrical, its sides parallel; conical in front of eyes and fringed along each side with sparsely set, short and stiff hairs; eyes oval and slightly projecting; antennæ slender and somewhat longer than the head; third joint longest, the fourth slightly shorter, the following joints gradually diminishing in length; joints 3 to 5 clavate, the last three fusiform; all are furnished with a few very slender hairs around the apex, the hairs becoming somewhat more numerous on the last three joints. Prothorax conical, anteriorly as broad as the head, arcuate and broadest posteriorly and with a prominent lateral angle beyond the insertion of the legs, each of which bears a rather long and stiff hair or bristle, while the posterior margin is provided each with two or three short and stiff hairs; meso-metathorax quadrangular, longer than broad, slightly broadest and arcuate anteriorly, and with a prominent lateral angle each side. Abdomen much elongated and longer than the rest of the body, broadest in front, tapering gradually towards the end, the tube or last segment cylindrical and about as long as the posterior tibiæ and tarsi combined; each joint of the abdomen is furnished each side near its posterior margin, with apparently three slender and radiating, pale brownish hairs, which gradually grow longer and more bristle-like towards the end of the body, while the apex of the tube is surrounded by six long and radiating bristles alternating with short and reflexed hairs. Legs rather long and stout, with the anterior femora, especially those of the male, much inflated towards the base; tarsi of the female simple, while the anterior pair of the male bear a large and stout, acute tooth at inner side of base; all legs are sparsely furnished with short and stiff hairs. Wings narrow, of equal width throughout, rounded at the apex, gently and uniformly curved and reaching nearly to the tube; veins of both pairs scarcely one-fourth the length of the wing; surface of the head transversely striated, the thorax finely granulated; prothorax with a shallow, impressed, median line and a shallow, more or less elongated fovea or puncture each side of it anteriorly.

Described from numerous specimens. Found in the vicinity of Washington, D. C., during the Spring and early Fall on green and dry branches, and during late Fall and Winter under the loose bark of *Pinus inops*, *Juniperus virginiana* and *Abies* sp.

OBITUARY.

WILLIAM HENRY TUGWELL died on Sept. 20, 1895, at Lewisham Road, near London, England, aged 64 years. He was interested in Lepidoptera.

ENTOMOLOGICAL NEWS for January, 1896, was mailed December 31, 1895.

DR. ASA FITCH.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. VII. MARCH, 1896. No. 3.

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Dr. ASA FITCH.

Dr. Asa Fitch was a son of Hon. Asa Fitch, M.D., and was born Feb. 24, 1809, at Fitch's Point, Salem, Washington County, N. Y., and died at his home April 7, 1879, aged 70 years. In the death of Dr. Fitch Economic Entomology, in this country, lost one of its ablest votaries, who spent the larger part of his life in the untiring and successful study of the insects injurious to agriculture and horticulture. While his earlier writings were contemporaneous with those of Harris, and his later ones with those of Walsh, he will, judged by the work he did, take a high rank among the fathers of applied entomology in America. He practised medicine for eight years, but in 1838 gave it up to assume the management of his father's business. From this time on he devoted himself to agricultural pursuits, which gave more opportunities for investigations in entomology. He was appointed State Entomologist of New York, which position he held for seventeen years, and among other things published fourteen reports on the noxious, beneficial and other insects of the State of New York.

NOTES ON EUROPEAN ENTOMOLOGICAL COLLECTIONS.

By PHILIP P. CALVERT, Ph.D.

(See the NEWS for January, 1896, vol. vii, p. 4.)

II.—OXFORD.

The entomological collections of the University of Oxford are contained in a series of rooms on the second floor of the University Museum, which also accommodates the zoological collections in general, the zoological laboratories and library. Prof. Edward B. Poulton, the present occupant of the Hope Professorship of Zoology as successor to the late Prof. J. O. Westwood, and Curator of the Entomological Department, has kindly furnished the following notes on the insects :

"The foundation of the Oxford Collection is the Saunders' Collection bought by the Rev. F. W. Hope and presented by him with his other collections and a very complete library to the University, together with the endowment of the Hope Chair and a small endowment for keeping up the collections. Other important collections now in the Hope Department are those of Miers and of Burchell ; all these three extend into all Insect Orders, but the Coleoptera are probably the most complete. There is also the Bell Collection of Crustacea, containing numerous Bell types. In the Saunders' Collection are many thousand Walker types; how great a number will not be known until the collections have been carefully studied and each one marked plainly. This we are doing as quickly as possible, but of course it is a tremendous task. The Coleoptera are rich in Hope types. All orders are rich in Westwood types, gradually described by him during his long tenure of the chair and published in his 'Thesaurus,' 'Cabinet of Oriental Entomology,' 'Revisio Mantidarum,' etc. These, too, will require the same careful marking. It is now a matter of investigation to make out the types when any one desires to study them.* There are also some of the types of Haworth's 'Lepidoptera Britannica.' Many of the obscure groups of insects, such as the Membracidæ, are very rich. There are also many types of Stoll, Boisduval, Saunders and others, but really we do not yet know at all fully the treasures of the collection until it has been gone through and arranged properly. The late Professor, who knew it thoroughly, never left a complete account of it and a great deal will require learning over again. The Pierinæ and the Sphingidæ are now rearranged, but these groups contain few types, and the moths generally have been studied, the Oriental by Col. Swinhoe, the American by Mr. W. Schaus. The Cicadas are now being done, and the Membracidæ by Canon W. W. Fowler; the former contain some types of Stoll.

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* I can personally testify to the truth of this remark of Prof. Poulton's. Mr. McLachlan had told me of the existence, at Oxford, of Rambur's types of Odonata described from the Marchal collection, and these I desired to see. Unfortunately, Prof. Poulton was absent at the time of my visit, but his Assistant, although unable to give information concerning them, very obligingly gave me full access to the cabinets, and, after some search, guided by a peculiar style of label, and by the French handwriting, I found the specimens in question. They agree with the information given by Rambur concerning the *individuals* he described.

Many of our specimens are of great interest, being Wallace's Malay specimens, and many collected by Bates, on the Amazons, and by Belt, in Nicaragua, but the Wallace are the richest and the most interesting in this collection."

III.—CAMBRIDGE.

Here, as at the sister University, the University Museum building shelters the Entomological collections, as well as those of other branches of zoology and the zoological laboratories. To the kindness of Dr. David Sharp, Curator of Insects, the following notice is due :

"The Museum has a general collection of British Insects which, however, is in certain groups of a deplorably minus character. It possesses the European collection of Coleoptera of the late G. R. Crotch, and his typical collection illustrating his works on Erotylidæ and Coccinellidæ There is also a small lot of exotic insects, most of which were presented by the late Neville Goodman, and were collected by him in the Amazons Valley and in South Africa.

" At present we have in the Museum a quite wonderful collection of Termites and parts of their Termitaria, formed by Mr. Haviland, chiefly in Borneo and Singapore. This collection differs from all others as it was made entirely from the nests themselves, and thus contains the various forms of each species which are wanting in all other collections so far as I know. I hope Mr. Haviland may be able to describe this collection which consists of about 90 species, of which probably as many as 75 or 80 are new."

RAVAGES OF DERMESTES VULPINUS IN CORK.

By W. J. HOLLAND, Ph.D., F.Z.S., Etc.

Messrs. Armstrong, Brothers & Company, of Pittsburgh, who are the largest manufacturers of cork in the United States, recently sent me a couple of specimens of cork which had been completely riddled by *Dermestes vulpinus.* A bottle cork one inch in diameter and one and one-third inches in length had in it five burrows, or tunnels, each containing an adult *Dermestes* with the larval exuvium closing the orifice by which entrance had been gained. Messrs. Armstrong Brothers reported to me that a large invoice of cork from Spain had been found to be infested by these insects, occasioning a loss of fully two per cent.

The destructive character of this beetle is too well known to require any comment, but its presence in cork, which is so largely used as a lining material for the drawers in insect cabinets, suggests the propriety of thoroughly poisoning all cork before it is used as the lining of cabinets. In doing this I have found that the best medium is carbon bisulphide, and I have made it a rule in recent years, when I have any cabinet drawers constructed, to have the cork, before it is placed in position, immersed for a time in carbon bisulphide, after which the sheets are allowed to remain in the open air until the fluid has evaporated. This method of destroying not only *Dermestes*, but specimens of *Anobium* and other cork-infesting beetles is far preferable to the method which has been sometimes recommended of painting the cork or saturating it with an alcoholic solution of corrosive sublimate. The effect of corrosive sublimate upon the pins is not good, and in the second place it is a dangerous substance to use, inasmuch as the cork in all properly constructed drawers after it has been glued to the bottoms should be sand-papered by machinery, in doing which clouds of fine dust are raised, some of which inevitably enters the nostrils and lung passages of the workmen and is liable to produce irritation. In fact, one builder positively refused to construct a cabinet for me some years ago using cork which had been steeped in a saturated solution of corrosive sublimate.

ANOTHER EUCHROMIID TO BE ADDED TO OUR LIST.

By HARRISON G. DYAR.

Another Cuban moth has occurred in southern Florida. It is *Syntomeida minima* Grote, and is represented by a pair in Dr. Ottolengui's collection, captured *in coitu* at Miami, Fla., on March 12, 1895.

The specimens are somewhat larger than Mr. Grote's original example, expanding 29 mm. in the male, 26 mm. in the female. There is an additional white spot on the primaries below the median vein at basal third of cell, narrow, elongate. In the female the basal white spot on secondaries is wanting, and the white abdominal dots vary in the two examples, the male having two, the female four on each side above. These variations do not warrant a varietal name, as the white spots are variable in the other species of the genus.

In his original description in 1867, Mr. Grote remarks that in the then state of the subject, this species could be put in the genus *Hippola* of Walker. *Hippola* is now made a synonym of *Syntomeida* by Kirby; but Mr. Grote's remarks remain as true to-day as when first written nearly thirty years ago, for they imply the unsatisfactory condition of the genera of the Euchromiidæ, which still need revision.

S. minima agrees structurally with our other species of *Syntomeida*, except that the hind legs are long and tufted as in *Phyllœcia*. The type of *Phyllœcia* is, however, not known to me (*P. punctata* Guer.), nor that of *Callicarus* (*C. pennipes* Grt.) placed in the synonymy by Mr. Kirby. Our *P. texanus* agrees with *S. minima* in the tufted legs, but differs in the presence of an accessory cell, which, however, I find is not constant. Still *minima* may remain in *Syntomeida* at present, I think, as its pattern of maculation corresponds, and it falls there in the synopsis of genera (see Journ. N. Y. Ent. Soc., i, 100, 1893).

The following synopsis will separate our species of the genus:

Abdomen banded with fulvous and black . . . . **ipomœæ.**
Abdomen not banded.
  Abdomen with a red tip; expanse 45 mm. . . . . **epilais.**
  Abdomen without red tip; expanse 29 mm. or less . . . . **minima.**

A Review of T. L. Casey's Reasons for Striking Certain Species of Coleoptera from the American-Asiatico-European Catalogue.

By JOHN HAMILTON, M.D.

Conurus (*Conosoma*) **pubescens** Payk. was placed as one of the species common to the two hemispheres in the first edition of the catalogue of the Coleoptera common to these regions on the authority of investigations made by Dr. Horn and others, and on the authority of comparisons made by myself with several Swedish examples. There seemed no difference whatever, except a little tendency in the Swedish to color variation. Mr. A. Fauvel published a French edition inserting *pubescens* and extending its American distribution. Now comes T. L. Casey, in Coleopterological Notices No. vi, recently published, with the announcement that *pubescens* is not American. This is done on the strength of a comparison with what he says are well authenticated European types. From what is said of these types they probably belong to an extreme variety known in Europe as *crpticola*, which is in my collection, and which is so different in aspect from *pubescens* as to be readily convertible into a new species by any one on the lookout for such opportunities. The weight of the evidence is not favorable to Mr. Casey's view.

Anthicus basillaris Say.—Mr. Casey, in the work cited, unites this with *floralis* Linn. placed in his new genus *Hemantus*. I fell into the same error in the first edition of the catalogue referred to, as it was considered at that time to be the ♀ of *floralis*. In the French edition Mr. A. Fauvel rectified the error and added *basillaris* to the list of common species, uniting with it *quisquilius* Thoms. Since that time a new European catalogue has made its appearance in which an older name, *formicarius* Goeze, has been resurrected with which *quisquilius* has been united, consequently carrying with it *basillaris*. The species now stands in the Catalogue: *A. formicarius* Goeze, *basillaris* Say.

Any one conversant with Say's mode of describing will see at once on turning to his description of *basillaris* that he had not before him examples of *floralis*, as it is highly improbable he would have omitted so prominent a character as the two tubercles on the apex of the thorax. Those not caring to adopt Mr. Casey's genera will now find two species in *Anthicus*, each with the name *formicarius*, and as Laferté's species is the more recent it may be known by the name *myrmecoides*.

Some of Mr. Casey's remarks under *floralis* seem a little nephelic. He states that the American form is the true *floralis* of Linné, "but quite possible that it [the American form] may be different from the *Anthicus floralis* of European authors." If he means that he has not seen the European *floralis*, which seems the more obvious interpretation, he may rest assured that they are identical, as I have made the comparison more than once.

Lepyrus colon Linn. = **palustris** Scop. (an older name). In the Notices cited, Mr. Casey strikes this species from the American list for scarcely any other reason, if he is rightly understood, than that he has never seen an American example. This will scarcely be accepted as a scientific procedure, and that Mr. Casey should have resorted to this method of getting rid of an Europeo-American species is only to be understood in connection with his often expressed unwillingness to admit the identity of European and eastern American forms not imported.

Lepyrus colon was considered by Mr. Kirby, Schoenherr and others, as well as Dr. LeConte, to be common to the two hemispheres, and it can scarcely be doubted that they all saw examples from both countries and knew what they did see; yet Mr. Casey consigns into synonymy with a single sweep of the pen all their determinations, for the reason that he had not seen an American example, therefore they had not. Mr. Casey does not verify his assertion by any examination of a type: some of Kirby's are probably extant yet in the British Museum, while some of Dr. LeConte's as determined for the Canadian Explorations and Surveys, are deposited according to Mr. Harrington, in the Museum of the Natural History Society of Montreal. Mr. Casey's "hypothesis," as he styles his reasons for uniting the *colon* of the above mentioned authors with *geminatus* Say, cannot be accepted.

INSECTS AND FLOWERS are more or less closely connected in the study of Nature, and especially is this true with those interested in Hymenoptera and Lepidoptera; we therefore feel sure that *Success with Flowers*—an excellent monthly magazine, published by the Dingee & Conard Co., West Grove, Pa., at only 25 cents a year,—cannot fail to interest and profit all lovers of flowers. They have also issued a handsomely illustrated *Guide to Rose Culture*, containing a complete collection of all flowers worth growing, a copy of which will be sent free to intending purchasers upon request. See their advertisement in *this* number, and don't forget to mention ENTOMOLOGICAL NEWS when you send for a copy of their publications.

A List of Lepidoptera taken at Oneonta, N. Y., 1894.

By G. F. CLEVELAND, Oneonta, N. Y.

These species were all taken by myself within a radius of three miles of my home, with exception of one or two, which are specified in the list.

Danais archippus, common, September.

Argynnis aphrodite, common, July.

" *cybele*, common, July.

" " aberration, one specimen (dark markings on underside of primaries run together and are nearly black).

Argynnis myrina, *A. bellona* (not common this year (1894), but very plentiful in 1893).

Euptoieta claudia, a few specimens observed in October.

Phyciodes tharos, common during Summer.

" *nycteis*, common during July.

Melitæa phæton, local, but plenty where found: June to July.

Grapta progne, not as common this year as in 1893.

" " var. *L. argentium*, rare, July.

" *comma*, common whole season (March to October).

" " var. *dryas*, common, July.

" *interrogationis*, rare this season.

" " var. *umbrosa*, five specimens.

" " var. *fabricii*, many poor specimens.

" *faunus*, three specimens, July; taken at Sidney, N. Y.

" *harrisii*, quite plentiful during September.

Vanessa antiopa, very common whole Summer and Autumn.

" *milbertii*, very common August and September.

Pyrameis huntera, common on blue daisy, September.

" *atalanta*, common at sugar, September.

Limenitis arthemis, local, but common where found; June 28 to July 15).

Limenitis disippus, very common.

Satyrus alope, common on elevated pasture lands.

Neonympha canthus, rather scarce this season, but plentiful in 1893 in grass swamp on top of hill.

Neonympha eurytris, common in woods, June 26 to July 30.

Chrysophanus americana, *C. thæ*, common.

Lycæna pseudargiolus, common during April.

Thecla titus and *edwardsii*, very local and rare found only in one locality on flowers of milk-weed.

Colias philodice, common as usual.

" " var. *alba*, common on blue daisy, Sept. 1 to 20.

Pieris rapæ, common.

" *oleracea*, only three specimens taken.

Papilio troilus, only one specimen taken.

" *asterias*, only two seen but not taken.

" *turnus;* only five or six seen this year, but in 1893 they were quite plentiful, and in 1892 they could be counted by hundreds flying about Syringa bushes.

Pamphila peckius, *P. napa*, *P. manataaqua*, *P. zabulon*, common.

Eudamus tityrus, common, July.

" *bathyllus*, common.

HETEROCERA.

Hemaris diffinis, three specimens.

Amphion nessus, one taken June 7, 1894.

Deilephila lineata, *D. chamænerii*, rare this year, but quite common in 1893.

Darapsa chœrilus, quite common.

Smerinthus modesta, fifteen specimens; June 25 to July 10.

" *geminatus*, not as plentiful as in 1893.

" *ophthalmicus*, five specimens; June 29 to July 20.

Paonias myops, rare this year, but plentiful in 1893.

" *excæcatus*, rare.

" " dark variety ♂ fairly common.

Cressonia juglandis, one specimen, ♀.

Sphinx kalmiæ, common.

" *gordius*, very rare this year, but plentiful in 1893.

" *drupiferarum*, fairly common.

" *chersis*, one specimen observed, but it escaped; I think there have been only three ever taken here.

Ellema harrisii, more common than usual.

Daremma undulosa, very common.

Ceratomia amyntor, rare.

Prionoxystus robiniæ, three specimens.

" ——, one specimen.

" ——, one specimen.

Alypia octomaculata, very common.

Mamestra bella, only two or three battered specimens.

Ctenucha virginica, common.

Callimorpha militaris, one specimen.
Eudryas unio, rare this year, common in 1893.
" *grata*, common.
Ecpantheria scribonia, several specimens.
Arctia virgo, common.
" *arge* and varieties very common.
Phragmatobia rubricosa, three specimens.
Hyphantria cunea, *Spilosoma virginica*, *Leucarctia acræa*, *Euchætes collaris*, common.
Euchætes egle, rare.
Pyrrharctia isabella, *Halisidota tessellata*, *H. caryæ*, *H. maculata*, common.
Tolype velleda, one specimen.
Clisiocampa americana, common.
Cerura borealis, rare.
Nadata gibbosa, *Datana mimestra*, common.
Datana rubicunda, common.
Anisota senatoria, rare.
Hyperchiria io, *Actias luna*, *Telea polyphemus*, common.
Attacus promethea, cocoons plentiful in February, 1894, but I have never taken but one specimen at light.
Platysamia cecropia, very common.

I have not, until this Winter, been interested in the Noctuidæ, and have not identified much of what I took, but I made a small collection of Catocalæ which I have named:

Catocala nubilis, rare, May.
" *puritanis*, rare, July.
" *habilis*?, rare, September.
" *cara*, common, September.
" *ilia*, rare, September.
" *concumbens*, common, September.
" *portia*, common, September.
" *neogama*, common, September.
" *desperata*, rare, September (Sidney, N. Y.).
" *briseis*, quite common.
" *relicta*, rare.
" *ultronia*, quite common.
" *antinympha*, common.
Plusia simplex, *P. contexta*, common.

THE "DEATH-WATCH" BEETLE.

The common name of Death-watch, given to *Xestobium tesselatum*, sufficiently announces the popular prejudice against this insect; and so great is this prejudice, that, as says an editor of Cuvier's works, the fate of many a nervous and superstitious patient has been accelerated by listening, in the silence and solitude of night, to this imagined knell of his approaching dissolution. The learned Sir Thomas Browne considered the superstition connected with the Death-watch of great importance, and remarks that "the man who could eradicate this error from the minds of the people would save from many a cold sweat the meticulous heads of nurses and grandmothers," for such persons are firm in the belief that the solemn Death-watch clicks the hour of death.

The witty Dean of St. Patrick endeavored to perform this useful task by means of ridicule. And his description, suggested, it would appear, by the old song of "A cobbler there was, and he lived in a stall," runs thus:

—— A wood worm
That lies in old wood, like a hare in her form,
With teeth or with claws, it will bite, it will scratch;
And chambermaids christen this worm a Death-watch,
Because, like a watch, it always cries click.
Then woe be to those in the house that are sick!
For, sure as a gun, they will give up the ghost,
If the maggot cries click when it scratches the post.
But a kettle of scalding hot water injected,
Infallibly cures the timber affected;
The omen is broken, the danger is over,
The maggot will die, and the sick will recover.

Grose, in his "Antiquities," thus expresses this superstition: "The clicking of a Death-watch is an omen of the death of some one in the house wherein it is heard." Watts says: "We learn to presage approaching death in a family by ravens and little worms, which we therefore call a Death-watch." Gray, in one of his Pastorals, thus alludes to it:

When Blonzelind expired, ...
The solemn Death-watch click'd the hour she died.

"It will take," says Mrs. Taylor, a writer in "Harper's New Monthly Magazine" (vol. xxiii, 775.) "a force unknown at the present time to physiological science to eradicate the feeling of terror and apprehension felt by almost every one on hearing this small insect." She herself, an entomologist, confesses to have been very much annoyed at times by coming in contact with this "strange nuisance," but she was cured by an over application. "I went to pay a visit." says she, "to a friend in the country. The first night I fancied I should have gone mad before morning. The walls of the bed-room were papered, and from them beat, as it were, a thousand watches—tick, tick, tick ! Turn which way I would, cover my head under the bed-clothes to suffocation, every pulse in my body had an answering tick, tick, tick ! But at last the welcome morning dawned, and early I was down in the library ; even here every book, on shelf above shelf, was riotous with tick, tick, tick ! At the breakfast-table, beneath the plates, cups and dishes, beat the hateful sound. In the parlor, the withdrawing room, the kitchen, nothing but tick, tick ! The house was a huge clock, with thousands of pendulums ticking from morning to night. I was careful not to allow my great discomfort to annoy others. I argued, what they could tolerate surely I could; and in a few days habit had rendered the fearful, dreaded ticking a positive necessity."

Baxter, in his "World of Spirits," p. 203, most sensibly observes, that "there are many things that ignorance causeth multitudes to take for prodigies. I have had many discreet friends that have been affrighted with the noise called a Death-watch, whereas I have since, near three years ago, oft found by trial that it is a noise made upon paper by a little, nimble, running worm, just like a louse, but whiter and quicker; and it is most usually behind a paper pasted to a wall, especially to wainscot; and it is rarely, if ever, heard but in the heat of Summer."

In the "British Apollo," 1710, ii, No. 86, is the following query: "Why Death-watches, crickets and weasels do come more common against death than at any other time? *Ans.*—We look upon all such things as idle superstitions, for were anything in them, bakers, brewers, inhabitants of old houses, etc., were in a melancholy condition." To an inquiry (ibid. vol. ii, No. 70) concerning a Death-watch, whether you suppose it to be *a living creature*, answer is given: "It is nothing but a little worm in the wood."

"How many people have I seen in the most terrible palpitations, for months together, expecting every hour the approach of some calamity, only by a little worm, which breeds in old wainscot, and, endeavoring to eat its way out, makes a noise like the movement of a watch !" (Secret Memoirs of the late Duncan Campbell, 1732, p. 61).

Authors were formerly not agreed concerning the insect from which this sound of terror proceeded, some attributing it to a kind of wood-louse, others to a spider.

The "Death watch" commences its clicking, which is nothing more than the call or signal by which the male and female are led to each other, chiefly when Spring is far advanced. The sound is thus produced: Raising itself upon its hind legs, with the body somewhat inclined, it beats its head with a great force and agility upon the plane of position. The prevailing number of distinct strokes which it beats in succession is from seven to nine or eleven; which circumstance, thinks Mr. Shaw (*Zool.* vi, 34), may perhaps still add, in some degree, to the ominous character which it bears. These strokes follow each other quickly, and are repeated at uncertain intervals. In old houses, where these insects abound, they may be heard in warm weather during the whole day.—*Cowan's Curious Facts.*

SUPERSTITIONS ABOUT "LADY-BIRDS."

(COCCINELLIDÆ.)

The Lady-bird (*Coccinella septempunctata*) in Scandinavia was dedicated to the Virgin Mary, and is there, to this day, called *Nyckelpiga*—Our Lady's Key-maid, and (in Sweden, more particularly) *Jung-fru Marias Gullhona*—the Virgin Mary's Golden-hen. A like reverence was paid to this beautiful insect in other countries; in Germany they have been called *Frauen* or *Marienkafer*—Lady-beetles of the Virgin Mary; and in France are now known by the names of *Vaches de Dieu*—Cows of the Lord, and *Betes de la Vierge*—Animals of the Virgin. The names we know them by, *Lady-bird*, *Lady-bug*, *Lady-fly*, *Lady-cow*, *Lady-clock*, *Lady-couch* (a Scottish name), etc., have reference also to this same dedication, or, at least, respect.

The Lady-bird in Europe, and particularly in Germany, where it probably is the greatest favorite, and whence most of the superstitions connected with it are supposed to have originated, is always connected with fine weather. At Vienna the children throw it into air, crying,—

Little birdie, birdie,
Fly to Marybrunn,
And bring us a fine sun.

Marybrunn being a place about twelve English miles from the Austrian capital, with a miracle-working image of the Virgin (still connected with the Virgin), who often sends good weather to the merry Viennese (Chambers' *Pop. Rhymes*, 1841, p. 170).

And, from the marsh of the Elbe, to this little insect the following words are addressed :

May-cat,
Fly away,
Hasten away,
Bring me good weather with you to-morrow.

In England, the children are wont to be afraid of injuring the Lady-bird lest it should rain.

With the Northmen, the Lady-bird—Our Lady's Key-maid—is believed to foretell to the husbandman whether the year shall be a plentiful one or the contrary; if its spots exceed seven, bread-corn will be dear ; if they are fewer than seven, there will be an abundant harvest and low prices. And, in the following rhyme from Pleon, this insect is invoked to bring food :

Marspäert, fly to heaven !
Bring me a sack full of biscuit, one for me, one for thee,
For all the little angels one.

In the north of Europe it is thought lucky when a young girl in the country sees the Lady-bird in the Spring; she then lets it creep about her hand, and says: "She measures me for wedding gloves." And when it spreads its little wings and flies away, she is particular to notice the direction it takes, for thence her sweetheart shall one day come. The latter part of this notion obtains in England ; and it has been embodied by Gay in one of his Pastorals as follows :

This Lady-fly I take from off the grass,
Whose spotted back might scarlet-red surpass,
Fly, Lady-bird, north, south, or east or west,
Fly where the man is found that loves me best.
He leaves my hand, see, to the west he's flown,
To call my true-love from the faithless town.

In Norfolk, too, where this insect is called the Bishop Barnabee, the young girls have the following rhyme, which they continue to recite to it placed upon the palm of the hand, till it takes wing and flies away :

Bishop, Bishop Barnabee,
Tell me when my wedding be;
If it be to-morrow day,
Take your wings and fly away!
Fly to the east, fly to the west,
Fly to him that I love best.

Why the Lady-bird is called Bishop Barnabee, or Burnabee, there is great difference of opinion. Some take it to be from St. Barnabas, where festival falls in the month of June, when this insect first appears; and others deem it but a corruption of the Bishop-that-burneth, in allusion to its fiery color.

So also in Scotland, the Lady-bird, which is still a great favorite with the Scottish peasantry, has been used for divining one's future helpmate, as appears from a rhyme from the north of Scotland, which dignifies the insect with the title of Dr. Ellison :

Doctor, Dr. Ellison, where will I be married?
East, or west, or south, or north?
Take ye flight and fly away.

It is sometimes also termed Lady Ellison, or knighted Sir Ellison; while other Scottish names of it are Mearns, Aberd, The King, and King Galowa, or Calowa. Under this last title of dignity there is another Scottish rhyme, which evinces also the general use of this insect for the purpose of divination :

King, King Calowa,
Up your wings and flee awa'
Over land and over sea;
Tell me where my love can be.

There is a Netherlandish tradition that to see Lady-birds forebodes good luck; and in England it is held extremely unlucky to destroy these insects. Persons killing them, it is thought, will infallibly, within the course of the year, break a bone, or meet with some other dreadful misfortune.

In England the children are accustomed to throw the Lady-bird into the air, singing at the same time :

Lady-bird, lady-bird, fly away home;
Your house is on fire, your childrens at home,
All but one that digs under the stone,—
Ply thee home, lady-bird, ere it be gone.

Or, as in Yorkshire and Lancashire,—

Lady-bird, lady-bird, eigh thy way home;
Thy house is on fire, thy children all roam,
Except little Nan, who sits in her pan,
Weaving gold laces as fast as she can.

Or, as most commonly with us in America,—

Lady-bird, lady-bird, fly away home,
Your house is on fire, and your children all burn.

The meaning of this familiar, though very curious couplet, seems to be this: the larvæ, or young, of the Lady-bird feed principally upon the Aphides, or plant-lice, of the vines of the hop; and fire is the usual means employed in destroying the Aphides; so that in killing the latter, the former, which had come for the same purpose, are likewise destroyed.—*Cowan's Curious Facts.*

I RECEIVED the February number of the NEWS last evening and noticed the article on the Red Bug by Mrs. A. T. Slosson, and also the article in the previous number by Dr. Hamilton.

Thinking that you might not take a quotation on the subject amiss, I will enclose one from White's "Natural History of Selborne," which I happen to be reading.

From White's letter to Thomas Pennant dated March 30, 1771: "There is an insect with us, especially on chalky districts, which is very troublesome and teasing all the latter end of the summer, getting into people's skins, especially those of women and children, and raising tumours which itch intolerably.

"This animal (which we call harvest bug) is very minute, scarce discernible to the naked eye; of a bright scarlet color, and of the genus of Acarus.*

"They are to be met with in garden on kidney beans, or any legumens, but prevail only in the hot months of summer.

"Warreners, as some have assured me, are much infested by them on chalky-downs, where these insects sometimes swarm to so infinite a degree as to discolour their nets, and to give them a reddish cast, while the men are so bitten as to be thrown into fevers."—I. FOSTER MOORE, JR., Bridgeport, Conn.

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* "Leptus autumnalis of Latreille."

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., MARCH, 1896.

The New Quarters of the Society and Section.

THE American Entomological Society and the Entomological Section of The Academy of Natural Sciences of Philadelphia, have moved into new and commodious quarters in the Academy. For a number of years past we have been badly in need of space, both for the collections and library. The new rooms are large and well lighted, so that students can have ample facilities for work. The collections can be put in better order, and there is room to spread and grow. The extent and value of the collections are too well known to be detailed at this time and place, and we can only say that we are prepared to receive collections by gift or bequest, and that they will be properly cared for in a fire-proof building. The history of the American Entomological Society is largely the history of Entomology in the United States, and we intend to continue up to the standard. We began in Pennsylvania with men like Say, Melsheimer and Haldeman, and the State and the Society were later known the world over through the efforts of LeConte, Horn and Cresson. The future is promising, and the Society and the Entomological Section of the Academy will continue to be foremost as in the past. Later on we hope to give the readers of the NEWS an account of our collections, especially recent additions, and the work we are doing and plans for the furtherance of entomological interests.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

The Grape Root-Worm.—Under this title Mr. Webster has published in Bulletin No. 62, of the Ohio Experiment Station, an interesting experience with *Fidia viticida* Walsh. This recalls, strikingly, my own experience in the New Jersey vineyards when the "Rose-chafer" was the enemy whose destruction was sought; and after reading over Mr. Webster's Bulletin I think I can understand his feeling of helpless anger and disgust at having accomplished so little after so many trials. Briefly stated, the adult beetle lays its eggs under any convenient shelter on the vine, in little clumps or masses varying in number. The larvæ hatch, drop to the ground and make their way as best they can to the roots upon which they feed. They live underground throughout the Winter and emerge as adults the following June, when they feed upon the foliage of the grape. The injury is done by the larvæ feeding upon the roots and more or less impairing the vitality of the vine in that way. The interesting feature of Mr. Webster's experience is the fact that the arsenites acted so slowly and unsatisfactorily upon the beetles, and we are brought face to face here again with a very important fact in Economic Entomology which should prevent us from positively predicting the action of given insecticides in new cases. There seems to be no doubt now that arsenic acts very slowly indeed upon some insects, and that certain species are able to dispose of a comparatively enormous quantity without apparent trouble. Prof. Fernald has given his experiences with the Gypsy moth caterpillars: My own experience with "Rose-chafer" corroborates him as to the difficulty in destroying by means of arsenic this particular species, while Mr. Webster seems to have found something very similar with this grape root-worm, or rather with its parent beetle. Comparatively few experiments seem to have been made to prevent the beetle from getting into the ground by the use of repellant substances. Lime was used in one experiment; but it must not be forgotten where lime is used, that after a day or two it might just as well be so much dust of another character for all the insecticide effect that it will have. Lime is an insecticide only when it acts as a caustic, or it does only what any other extremely fine powder would do under similar circumstances. There would have been a good deal more chance of success if ground tobacco had been used, although even this lasts, effectually, only a short time. Here, however, there would have been this advantage: a watery extract of tobacco formed by rains, would prove of insecticide value if it came into contact with the larvæ upon the roots. Bisulphide of carbon was used with only very moderate success, and Mr. Webster calls attention to a fact that has not been mentioned, so far as I am aware, in connection with recommendations made for using this material; that is, that the soil must be neither too wet nor too dry. In either case the action will be unsatisfactory, and possibly this may account for some failures of which I have learned in an endeavor to use this material for other purposes. We are constantly discovering new and important factors that must be reckoned with if we want to obtain uniform results in the use of any insecticide. Mr. Webster finally makes as his most practical recommendation the suggestion that during the season of egg-laying and the hatching of the young larvæ the ground beneath the vines be kept constantly stirred and turned up towards the rows, so that roots and stem may be as deeply covered as possible by an unbroken surface making it necessary for the larvæ to dig down rather than crawl through some crevice to reach the roots. Any method of cultivation that induces the plant to send its roots down deeply is to be preferred to one which keeps the roots near to the surface. This particular insect has been known for a very long time, and not until the last year or two has it made its appearance in destructive numbers. It is quite likely that in the course of another short period it will disappear as abruptly as it became an injurious pest.

Cut-Worms.—During the season of 1895 worms seem to have been unusually abundant in many localities, and Bulletins on the subject were issued in New Jersey, Kentucky and New York. These same insects have been referred to more or less incidentally in other Station publications, and in the discussions before the various society meetings; and practically much the same species have proved troublesome in all the States. It is a matter of interest that difference in surroundings influence the habits of the insects, and that almost all species will climb trees and eat buds when they fail in obtaining a sufficient supply of low vegetation. In young orchards "climbing cut-worms" can do an enormous amount of irreparable damage, while even on larger trees they may affect the crop of fruit. In the New York Bulletin these "climbing cut-worms" of the orchard are especially treated, and considerable reference is made to experiences in Michigan, in dealing with similar insects. It seems tolerably easy to prevent the insects from climbing the trunks by means of a band of cotton batting several inches wide, tied at the bottom and then turned down so as to form a sort of cone. This appears to be absolutely unsurmountable for the cut-worms, and the trees can be protected from them without much trouble or expense; but they seem also inclined to chew the bark of the young trees at the surface and girdle them, causing even more damage than if they had been allowed to ascend and feast upon the buds. In such cases it seems to me that the "Raupenleim," or "Dendrolene," would serve a very much better purpose. A band of this material extending from the surface, or even a little below it, for eight, ten, or twelve inches up to the trunk, would be unsurmountable by cut-worms, unless they were numerous enough to cover the material so completely as to form a bridge for those coming after. In such a case a cotton band on top of the "Dendrolene" would serve as a complete protection. There are two other ways of avoiding injury to trees: one is by sowing crimson clover in the orchards believed to be infested, which early in the Spring will furnish an abundance of food for the cut-worms and render them disinclined to crawl up the trunks for feeding purposes; the other is a ring of poisoned bran placed around every tree, which will be fed upon before the insects undertake to climb; and the quantity to be applied must depend somewhat upon the number of cut-worms supposed to be in the orchard. Probably a combination of the "Dendrolene" band extending to the surface of the ground, and a ring of poison bran would be the most satisfactory, providing for a mechanical protection to the trees in the first place, and for the destruction of the caterpillars in the second. Mr. Davis claims that it is not necessary to sweeten the bran mixture in order to render it attractive to the larvæ, and he is probably correct; but the addition of sugar keeps the mixture moist for a somewhat longer time and renders it a little more adhesive, so that it does not so readily drop apart when it dries out a little. Prepared with sugar-water the poisoned bran ought to remain effective for at least three nights, except where exposed uncovered directly to the sun, in which case it will last only during the one night and will dry during the following day so as to lose its attractiveness to the insects.

Economic Entomology.—I have on more than one occasion called attention in this Department and elsewhere, to the danger lurking in the ever-increasing search for new varieties of fruits to be grown in the United States. Fruit trees are everywhere subject to insect enemies, and it is an easy matter to introduce these with the plants themselves. The matter has been discussed in the Association of Economic Entomologists, and while the importance of a concerted effort to keep out foreign pests was freely admitted, it was just as universally felt that we could not hope to get at present any satisfactory supervision over imports where ports of entry are as numerous as in our country. Prof. Cockerell, the energetic entomologist of the New Mexcio Station, refuses to be discouraged by the apparent difficulties in the way, and has prepared the thin end of the wedge—which is explained in the following:

Copy of resolutions concerning the Introduction of Injurious Insects from the South, drawn up by the Entomologist of the N. M. Agricultural Experiment Station and adopted by the council of said Station Jan. 9, 1896.

Resolved, (1) That great injury has already been done to the Agricultural and Horticultural interests of the Southern States by the introduction of injurious insects, as witness the various scale-insects on Citrus trees in Florida and Louisiana and cotton-weevil in Texas.

(2) That it is well known through recent investigations in the West Indies and Central America, that numerous scale insects and other pests exist in the countries to the south of us, but have not yet reached the U. S. Thus for example, the *Aspidiotus scutiformis* on Citrus trees in

Mexico, the *A. articulatus* on Citrus trees and many other plants in the West Indies, the *A. personatus* on numerous plants in the West Indies, etc.

(3) That past experience shows that these Mexican and West Indian species are likely to be introduced in the United States, if no precautionary measures are taken; and that some of them, at least, may be found to flourish over a considerable portion of N. A. Witness, for example, the West Indian *Diaspis amygdali* now injuring peach trees as far north as the city of Washington.

(4) That the results obtained by the horticultural quarantine officer of California show that it is possible to prevent by due vigilance, the introduction of numerous insect pests. Thus Mr. Craw has quite lately found on plants which were about to be landed at San Francisco a number of species of scale insects foreign to this country, several of them undoubtedly quite pernicious.

(5) That when the immense interests at stake are considered, the sum of money required to support a system of inspection and quarantine along the southern border of the United States appears quite insignificant. If but one serious pest were kept out of the country in a year, the saving would more than equal the cost.

(6) That there should accordingly be appointed horticultural quarantine officers at Nogales, El Paso, Eagle Pass, Laredo, Galveston, New Orleans, Mobile and Key West.

(7) That these officers should be empowered by the laws of their respective States and Territories to examine all plants introduced through their several localities, and destroy all found to be infested by insects.

(8) That when the quarantine officers have examined and passed a plant or collection of plants, they should issue a certificate to that effect to the importers, and that it should be made illegal to possess imported plants without such certificate.

(9) That the quarantine officers should be appointed by the Agricultural Experiment Stations of their several States and Territories and paid out of the funds of said States and Territories the necessary amount being appropriated to the Agric. Experiment Station for that purpose.

(10) That while much good could be accomplished as above, it is also very necessary to learn what injurious insects exist in all the regions to the south of us, so as to be warned of their probable advent in this country; and also to ascertain their natural distribution and life-histories, parasites, etc., so as to be prepared to meet them intelligently.

(11) That while observing with much satisfaction the recent temporary appointment of an agent by the Department of Agriculture to travel in Mexico and determine such points as the above, and freely acknowledging the importance of the results thus obtained, we cannot regard this as more than a beginning of an investigation which should at least occupy many years. Thus for example, we are still ignorant of the injurious insects inhabiting the whole west coast of Mexico south of Guaymas, of

Yucatan, Guatemala, Honduras, Nicaragua, Costa Rica, etc., while at no locality did the agent of the Department remain long enough to obtain more than a very superficial knowledge of the insects there existing.

(12) That we therefore recommend the appointment of a permanent agent who must be a skilled Entomologist, well informed about scale insects, to travel in Mexico, Central America and the West Indies, and make collections of injurious insects and such observation as are above indicated.

(13) That such agent should be appointed and paid by the Department of Agriculture, and be regarded as an official of the Division of Entomology, to which he should report and transmit all his collections, the latter to be finally deposited in the United States National Museum.

(14) That while thus in the service of the Department of Agriculture he should be instructed to cooperate with the several Agricultural Experiment Stations, and advise the quarantine officers concerning their work, in the light of the experience gained by his researches.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.--All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

DURING July of 1895, I took on flowers of Swamp Milkweed, *Asclepias carnosa*, and Pasture Thistle, two fine *Hemaris thysbe*, var. *uniformis*, in two localities of Westchester County, N. Y. I also received from a collector in Manitoba, three specimens of the same variation, which seems to be the prevailing form in that northern region.—Dr. R. E. KUNZE.

ENTOMOLOGICAL NEWS received. I am very much pleased with the volume for 1895. I have taken several entomological journals, but never saw one so handsome in its make up or more useful to students in the field. The NEWS aims high and invites its readers, who are in the amateur field, to come up higher. I find it constantly helpful, and if there is anything in my line I do not understand I take pleasure in studying it out.—A. W. P.

INSECTS INJURIOUS TO EVERGREENS.—The spruces in some parts of the United States are attacked by a gall-forming insect belonging to the coccid genus *Adelges Vallot.* On the grounds of the Massachusetts Agricultural College it has become quite abundant doing serious damage. We are making studies on this insect and hope to be able to publish a complete account of it before long. There seems to be some doubt whether we have more than one species in this country. Some specimens do not agree with Thomas' *Adelges abieticolens*, which he described from Illinois. If the insect occurs in your locality, will you kindly send me some of the gall infested twigs? At this season of the year only dead galls can be found, and they are dry and shrunken, with numerous open cells. Even these dry galls wills prove useful.—C. H. FERNALD, Amherst, Mass.

A CURIOUS ABERRATION OF *Melitæa phæton.*—Expands 54 mm.; colors as in *phæton*, but markings arranged as follows:

Primaries: red spots normal; the two outer rows of white fused together into a band which is cut by the veins into a row of dashes; the two inner rows similar, but faint and extending from the costa about one-third across the wing. Secondaries: red spots heavy, a reddish dash along costa; white represented by a single faint spot near the anal angle. Underside, primaries: all the white fused into a broad band, well defined and serrate on the outer edge; clouded on the inner edge; red spots normal. Secondaries: red spots heavy, those near the base of wing form a large blotch with no white intermingled; the white forms a clouded band with a blackish spot between each black vein and not reaching costal margin. One specimen taken in Webster, N. H., June 12, 1895, in a bog where *phæton* had never been observed before, and where most diligent search failed to discover more.—W. F. FISKE, Mast Yard, N. H.

ABOUT THE CHIGOE.—To the Pulicidæ belongs also a native of the West Indies and South America, the *Pulex penetrans*, variously named in the countries where it is found, Chigoe, Jigger, Nigua, Tungua and Pique. According to Stedman this "is a kind of a small sand flea, which gets in between the skin and the flesh without being felt, and generally under the nails of the toes, where, while it feeds, it keeps growing, till it becomes of the size of a pea, causing no further pain than a disagreeable itching. In process of time its operation appears in the form of a small bladder, in which are deposited thousands of eggs, or nits, and which, if it breaks, produce so many young Chigoes, which, in course of time, create running ulcers, often of very dangerous consequence to the patient; so much so, indeed, that I know a soldier the soles of, whose feet were obliged to be cut away before he could recover; and some men have lost their limbs by amputation—nay, even their lives—by having neglected in time to root out these abominable vermin. The moment, therefore, that a redness and itching more than usual are perceived, it is time to extract the Chigoe that occasions them. This is done with a sharp-pointed needle, taking care not to occasion unnecessary pain, and to prevent the Chigoe from breaking in the wound. Tobacco ashes are put into the orifice, by which in a little time the sore is perfectly healed." The female slaves are generally employed to extract these pests, which they do with uncommon dexterity. Old Ligon tells us he had ten Chigoes taken out of his feet in a morning "by the most unfortunate Yarico," whose tragical story is now so celebrated in prose and verse. Mr. Southey says that many of the first settlers of Brazil, before they knew the remedy to extract the Chigoes, lost their feet in the most dreadful manner. Walton, in his "Present State of the Spanish Colonies," tells us of a Capuchin friar, who carried away with him a colony of Chigoes in his foot as a present to the scientific colleges in Europe; but, unfortunately for himself and for science, the length of the voyage produced mortification in his leg, that became necessary to cut it off to save the zealous missionary's life, and the leg, with its inhabitants, were tumbled together into the sea. Humboldt observes "that the whites born in the torrid zone walk barefoot with impunity in the same apartment where a European, recently landed, is exposed to the attack of this animal. The *Nigua*, therefore, distinguishes what the most delicate chemical analysis could not distinguish, the cellular membrane and blood of our European from those of a Creole white."—*Cowan's Curious Facts.*

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be **limited to twenty-five** for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the anatomy of insects, however, whether relating to American or exotic species will be recorded.

1. Old Farm Fairies. A Summer Campaign in Brownieland against King Cobweaver's Pixies. A story for young people, by Henry Christopher McCook, 8vo. Philadelphia, George W. Jacobs & Co., 1895.—This is a novel book with a novel title. As the latter indicates, it is intended for the little ones, and will go far toward planting the seeds of interest for entomology in the minds of those whose inexperience precludes an interpretation of guides and introductions. The story deals almost entirely with spiders, who, under the guise of Pixies, wage an unsuccessful war against the Brownies. Numerous battles and duels occur,

and spider architecture, illustrations of which are in plenty, is skilfully seized to illustrate the pitfalls, forts and ambuscades set up by the Pixies. The work is fully illustrated, the pictures of spider architecture being valuable from a scientific standpoint, while others more calculated to please the juvenile mind are not wanting. Old Farm Fairies is a pleasing book, quite worthy of the author of "The Tenants of an Old Farm."—F.

2. ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, T. xxxix, 12.—New Hemiptera of the Section Hydrocorisæ Latr., A. L. Montandon. New Bolivian Lathridiidæ, R. P. Belon.

3. ANNALS AND MAGAZINE OF NATURAL HISTORY, No. 97.—On the Coccinellidæ of Japan, G. Lewis. Descriptions of new species of butterflies of the genus *Catasticta* in the British Museum, A. G. Butler. New genera and species of Pyralidæ, Thyrididæ and Epiplemidæ (cont.), W. Warren.

4. THE CANADIAN ENTOMOLOGIST, xxviii, 1.—William H. Edwards, C. J. S. Bethune. The "Bombyces," what are they? H. G. Dyar. Concerning *Feltia* and other matters, J. B. Smith. List of Hymenoptera taken at Sudbury, Ontario, J. D. Evans. The Mediterranean flour moth, *Ephestia kuehniella* Zeller, still in Canada, W. G. Johnson. *Aspidiotus perniciosus* Comstock, and *Aonidia fusca* Maskell. A question of identity or variation, W. M. Maskell. On *Agrotis tritici* Linn., ab. *subgothica* Haw., and *Agrotis jaculifera* Gn., J. W. Tutt. *Exomalopsis*, a neotropical genus of bees in the United States, T. D. A. Cockerell.

5. BERICHTE DER NATURFORSCHENDEN GESELLSHAFT ZU FREIBURG, i, B., ix, H. 2.—On the nerve terminations of the dermal sense organs of the Arthropoda, after treatment with the methyl-blue and chrome-silver methods, O. vom Rath.

6. ZOOLOGISCHER ANZEIGER, No. 493.—Can *Diplopoda* climb on perpendicular glass partitions?, C. Verhoeff.

7. THE GEOLOGICAL MAGAZINE, London, No. 379.—European species of *Etoblattina* . . . , S. H. Scudder.

8. BULLETIN FROM THE LABORATORIES OF NATURAL HISTORY, STATE UNIVERSITY OF IOWA, iii, No. 4 [Extract].—A list of some Coleoptera from the northern portions of New Mexico and Arizona, H. F. Wickham.

9. CORNELL UNIVERSITY AGRICULTURAL EXPERIMENT STATION (Entomological Division), Bulletin No. 107.—Wire worms and the bud moth, M. V. Slingerland. Ibid, No. 108.—The Pear Psylla and the New York Plum Scale, M. V. Slingerland.

10. Geological Survey of Canada: Contributions to Canadian Palæontology, ii, pt. 1.—Canadian fossil insects, S. H. Scudder.

11. ANNALES DE LA SOCIETE LINNEENNE DE LYON, T. xli (1894).—Nests and metamorphoses of insects, Fifth Memoir, Capt. Xambeu.

12. ACTES DE LA SOCIETE LINNEENNE DE BORDEAUX, 5e serie, T. vii. —Zoological Notes, J. Perez.

13. ENTOMOLOGISK TIDSKRIFT UTGIFVEN AF ENTOMOLOGISKA FORENINGEN I STOCKHOLM, xvi, H. 1-2.—Diagnoses of new Lepidoptera from Africa, C. Aurivillius. Contribution to the knowledge of the Capsid genus *Fulvius* Stal, O. M. Reuter. Ibid, xvi, H. 3.—Contributions to the knowledge of the insect fauna of Cameroons, ii, Rhopalocera, C. Aurivillius (continued in H. 4 of same volume).

14. ENTOMOLOGISCHE NACHRICHTEN, xxii, H. 2.—Two new Odonata captured by Mr. G. Zenker in Cameroons, F. Karsch.

15. PSYCHE, a journal of Entomology, February, 1896.—Habits and parasites of a new Californian wasp, A. Davidson. Notes on the Winter insect fauna of Vigo County, Indiana, iv, W. S. Blatchley. Final notes on *Orgyia*, H. G. Dyar. Notes on the Acrididæ of New England, ii, Tryaxilinæ ii, A. P. Morse. New species of *Papirius*, J. W. Folsom. Some new insects, T. D. A. Cockerell. A *Ceroplastes* and its parasite, ibid. Preliminary diagnoses of new Coccidæ, ibid.

16. UNITED STATES DEPARTMENT OF AGRICULTURE, DIVISION OF ENTOMOLOGY, Bulletin No. 2, new series (Proceedings of the Seventh Annual Meeting of the Association of Economic Entomologists).—Entomological notes and problems, J. B. Smith. Notes on insecticides, C. L. Marlatt. Some experiments with the knapsack kerosene attachment, H. E. Weed. A modification of the kerosene knapsack sprayer, C. M. Weed. Spraying without a pump, J. M. Aldrich. "Raupenleim" and "Dendrolene," J. B. Smith. A city entomologist and insecticides, E. B Southwick. Insects of the season in Michigan, G. C. Davis. Herbivorous habits of certain Dermestidæ, F. H. Chittenden. Some shade-tree insects of Springfield and other New England cities, L. O. Howard. The elm-leaf beetle in Washington, C. L. Marlatt. The elm-leaf beetle in Albany, J. A. Lintner. Notes on the Gypsy Moth in Massachusetts, C. H. Fernald. The striped cottonwood beetle, J. A. Lintner. On the study of forest-tree insects, A. D. Hopkins. The importation and repression of destructive insects, F. M. Webster. Insects of the year in Ohio, F. M. Webster. On the natural conditions which affect the distribution and abundance of Coccidæ, T. D. A. Cockerell. How shall we improve our collections?, C. P. Gillette.

17. ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE FRANCE, 1894, pt. 1, fasc. 1.—The genus *Dysides* Pert. (*Apoleon* Gorh. in part), P. Lesne. Descriptions of new species of Lampyridæ, E. Olivier. Note on the role of the sternal spatula in the larvæ of Cecidomyans, J. J. Kieffer. On the seminal receptacle of the wasp (*Vespa germanica*), P. Marchal. Descriptions of Nocturnal Lepidoptera, P. Thierry-Mieg. Of sex in the Scydmænidæ, J. Croissandeau. Determination of the sex of Coleopterous insects of the same species, M. Martin. Note on the cave-inhabiting Arthropoda of the Transvaal, E. Simon. The copulatory male organ of

the Hymenoptera and its taxonomic value, J. Perez. Note on the large Trombidions of the warm countries, E. Trouessart. Study of the neuration of insects applied to the description of fossil paleozoic insects, C. Brongniart. On the stridulatory apparatus of *Myrmica rubra* L., C. Janet. Description of a new species of Tineid (*Trichophaga coprobiella*) from Obock (Red Sea), E. L. Ragonot. J. J. Kieffer describes three new genera of Cecidomyidæ (no title). Ibid, pt. 1, fasc. 2.—Synonymical notes on the Microlepidoptera and descriptions of little-known or unpublished species, E. L. Ragonot. Voyage de M. E. Simon in austral Africa: Haliplidæ, Dytiscidæ and Gyrinidæ, M. Regimbart. Ichneumonidæ of Europe and surrounding countries, i, G. V. Berthoumieau. Descriptions of some species of the family Phalacridæ in the collection of M. A. Grouville, F. Guillebeau. On the group Epidosis of the family Cecidomyidæ, J. J. Kieffer (continued in pts 2 and 3 same volume). Ibid, pts. 2 and 3. —Contributions to the study of the African Brenthidæ, A. Senna. Buprestidæ collected in tobacco by the diligence of M. A. Grouvelle, C. Kerremans. Nests and metamorphoses of insects, Fourth Memoir, Capt. Xambeu. Ichneumonidæ of Europe (cont.), G. V. Berthoumieu. M. Fairmaire describes a new genus of Coleoptera (no title). Ibid, pt. 4.—Ichneumonidæ of Europe (cont.), G. V. Berthoumieu. M. Leveillé describes some new species of Coleoptera (Temnochilidæ) (no title). J. J. Kieffer gives a preliminary note on the genus *Campylomyza* and describes four new genera (no title). M. F. Guillebeau describes a new genus of Phalacridæ (no title). M. E. Abeille de Perrin describes two new genera of Coleoptera (no title).

18. THE CANADIAN ENTOMOLOGIST, February, 1896.—The Coleoptera of Canada, xiv (Meloidæ), H. F. Wickham. The North American species of *Gnathodus*, C. F. Baker. *Prosopis subtilis*, T. D. A. Cockerell. New Culicidæ from North America, D. W. Coquillett. In reply to criticism, H. G. Dyar. The American species of *Isotoma*, A. D. Macgillivray.

19. PROCEEDINGS OF THE ZOOLOGICAL SOCIETY OF LONDON, 1895, pt. 3.—On a small collection of butterflies sent by Mr. Richard Crawshay from the country west of Lake Nyasa, A. G. Butler. A monograph of the Bornean Lycænidæ, H. H. Druce.

20. BERLINER ENTOMOLOGISCHE ZEITSCHRIFT (published by Entomologischer Verein zu Berlin), Bd. xl. H. 3, 4.—New exotic Coleoptera, A. F. Nonfried. Dipterological studies, iii, Lonchæidæ, Th. Becker. *Midas* or *Mydas?*, C. R. Osten Sacken. Supplement to my recent paper on Lipcneuridæ, ibid. List of Sphingidæ collected by John Fruhstorfer during his residence in Java from 1891 to 1893, A. Huwe.

21. ATTI DELLA REALE ACADEMIA DELLE SCIENZE FISICHE MATEMATICHE, Naples (2), vol. vii.—Review of the Italian Hymenoptera, iii A. Costa.

22. ANNALI DEL MUSEO CIVICO DI STORIA NATURALE DI GENOVA

xxxiv.—A list of the Longicorn Coleoptera collected by Signor Fea in Burma, . . . with descriptions of new genera and species, C. J. Gahan. Hemiptera of the subf. Plataspidinæ collected by L. Fea in Burma and adjacent regions, A. L. Montandon. Voyage of L. Fea in Burma, etc.: Curculionidæ, J. Faust. Elateridæ collected by Dr. E. Modigliani, . . . in Sumatra, E. Candeze. Contribution to our knowledge of the Diplopoda of Laguria, R. I. Pocock. New species of Anthicidæ . . . , M. Pic. Chilopods and Diplopods of Papuasia, F. Silvestri. List of some *Collembola* of the Argentine Republic, E. Parona. On Chilopods and Diplopods of Sumatra, etc., F. Silvestri. Chilopods and Diplopods collected by Capt. G. Bove and Prof. L. Bazan in America Meridional, ibid. The Myriopoda of Burma, iv (Polydesmoidea), R. I. Pocock. Ibid, vol. xxxv. —Exploration of Guiba and the surrounding countries by Capt. V. Bottejo . . . Zoological results: Orthoptera, H. de Saussure; Plataspidinæ, A. L. Montandon: Rhynchota, A. DeCarlini; Diptera, E. Corti; Hymenoptera, P. Magretti; Formicidæ, C. Emery; Dytiscidæ and Gyrinidæ, M. Régimbart; Staphylinidæ, E. Eppelsheim; Melolonthini and Rutelini, E. Brenske; Anthicidæ and Pseudoanthicidæ, M. Pic; Curculionidæ, J. Faust; Coleoptera, R. Gestro; Chilopoda and Diploploda, F. Silvestri; Arachnida, P. Pavesi; Acaria, C. Parrona.

INDEX TO THE PRECEDING LITERATURE.

The number after each author's name in this index refers to the journal, as numbered in the preceding literature, in which that author's paper is published; * denotes that the paper in question contains descriptions of new North American forms.

THE GENERAL SUBJECT.

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ARACHNIDA.

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Scudder 7, de Saussure, 22.

THYSANURA.

Macgillivray 18*, Parona 22.

NEUROPTERA.

Karsch 14, Folsom 15*.

HEMIPTERA.

Montandon 2*, Maskell 4, Slingerland 9 (two), Scudder 10*, Reute 13*, Cockerell 15* (two), 16, Baker 18*, Montandon 22 (two), De Carli 22.

COLEOPTERA.

Belon 2, Lewis 3, Wickham 8, 18, Slingerland 9, Scudder 10*, Xambeu 11, 17, Blatchley 15, Chittenden 16, Regimbart 17, Guillebeau 17* (two), Lesne 17, Olivier 17, Croissandeau 17, Martin 17, Senna 17, Kerremans 17*, Fairmaire 17, Leveille 17, Perrin 17, Nonfried 20*, Gahan 22, Faust 22 (two), Candeze 22, Pic 22 (two), Regimbart 22, Eppelsheim 22, Brenkse 22, Gestro 22.

DIPTERA.

Kieffer 17 (four), Coquillett 18*, Osten Sacken 20 (two), Corti 22.

LEPIDOPTERA.

Butler 3, 19, Warren 3*, Dyar 4, 15, 18, Smith 4, Johnson 4, Tutt 4, Slingerland 9, Aurivillius 13 (two), Ragonot 17 (two), Thierry-Mieg 17 (two), Druce 19, Huwe 20.

HYMENOPTERA.

Evans 4, Cockerell 4*, 15* (two), 18, Perez 12, Davidson 15*, Morse 15*, Berthoumieu 17, Marchal 17, Perez 17, Janet 17, Costa 21, Margretti 22, Emery 22.

ECONOMIC ENTOMOLOGY.

Slingerland 9 (four), Smith 16 (two), Marlatt 16 (two), H. Weed 16, C. Weed 16, Aldrich 16, Howard 16, Lintner 16 (two), Fernald 16, Hopkins 16, Webster 16 (two).

Doings of Societies.

PHILADELPHIA, Feb. 11, 1896.

A stated meeting of the Feldman Collecting Social was held at the residence of Dr. Henry Skinner, No. 716 N. 20th Street. Members present: Messrs. Laurent, Trescher, Hoyer, H. W. Wenzel, Johnson, E. Wenzel, Griffith, Bland, Fox, Seiss, Castle, Boerner and Schmitz. Honorary members: Drs. Horn, Smith and Skinner. Visitors: Messrs. Lancaster Thomas, W. J. Gerhard, Charles Liebeck and Dr. W. E. Hughes. Meeting called to order at 9 P.M., President Bland presiding. After the reading of the minutes of the previous meeting, Dr. Horn, referring to Dr. Skinner's suggestion of his method of arranging males and females for their better identification, gave his views on the matter . . . . stating in conclusion that, in his opinion, every specimen should be marked with sex labels. In a later discussion between Horn, Smith and Skinner, regarding the labeling, numbering and use of vari-colored papers for the easy determination of species, localities, etc. Dr. Skinner stated that, in his opinion, the most important thing was to mark the date and locality, as it has frequently occurred in going over collections of deceased collectors where specimens were mounted with colored labels, numbered or lettered in reference to lists, such lists could generally not be found.

Prof. Smith exhibited proofs of illustrations which are to appear in his next annual report, explaining his method of preparing his plates, whereby he obtained such clear, sharp prints with almost a pure white background.

Mr. Johnson exhibited specimens of *Sargus nebeculosus* Zett., an introduced European species; about fifty specimens were collected near Newark, N. J., June 12–16, 1892; they were identified by comparison with some European specimens in the U. S. National Museum. The speaker states that they are the only North American specimens he has seen.

Mr. Liebeck exhibited a case of Melandrydæ and Pyrochroidæ, which he states is very near a complete collection. In habits these insects infest the bark and fungus on trees and logs. The collection was viewed with much interest.

Dr. Griffith exhibited a number of Curculionidæ from Brazil, which represents part of a large collection sent him.

Mr. Laurent exhibited what he termed the Lancaster Thomas exhibiting cabinet, which consisted of a case made in the usual way, having looking-glass placed in the bottom; the specimens are mounted on pieces of cork cemented to the glass; by this method all markings can be seen underneath the specimens at a glance without removing them from the cabinet.

Mr. Fox referred to a former communication by Prof. Smith on certain modifications of the hairs of bees and Diptera. The speaker had made an examination of a number of the fossorial Hymenoptera and found in most species the hairs are simple. In some Mutillidæ, however, the hairs are barbate, and the Scoliidæ, in which family the hairs are short and stout, some species have them translucid medially and crossed by oblique striations.

No further business being presented the meeting adjourned to the annex at 10.45, where Dr. Skinner again showed his hospitality in a substantial way. Mr. Bland presided at the banquet. Dr. Skinner, as toast master, called on Messrs. Bland, Horn and Smith to respond to the toasts on Entomology—past, present and future, other toasts following in order.

THEO. H. SCHMITZ, *Secretary.*

The Entomological Section

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF MEETINGS.

The following paper was read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS:

A NEW SPECIES OF MELEOMA.

By NATHAN BANKS.

Meleoma slossonæ n. sp.—Length 18 mm. Pale green, an indistinct yellowish stripe on middle of thorax, black stripe on cheek from eye to mouth, palpi mostly black, in ♂ a small black dot on innerside of basal joint of antennæ; antennæ wholly pale, a brown mark at each anterior corner of the pronotum, veins of wings green, some of the cross-veins partly black, pterostigma opaque. Bases of antennæ widely separated, basal joints diverging, in the ♂ the third joint is swollen on the innerside and concave outside, and much larger than in the ♀; between the antennæ in the ♂ is a short horn, about as long as broad, trifid at tip, the median part slightly longer and acute; on the middle of the face is a bunch of pale hairs; in the ♀ there are only some sutures indicating somewhat the shape of the horn of the ♂; above on the vertex, in both sexes, is a rounded transverse ridge; on the pronotum a somewhat elevated portion each side as in *M. signoretti;* wings slightly acute at tips, venation as in *M. signoretti.*

Several specimens from Mt. Washington and Crawford Notch, N. H., collected by Mrs. Annie T. Slosson.

This species is separated from *M. signoretti* Fitch:

First, by its larger size, the latter being about 16 mm. long.

Second, *M. signoretti* has no marks on the cheeks, and the palpi are pale.

Third, the horn of *M. signoretti* is as long as the basal joint of the antennæ, in *M. slossonæ* it is not half as long; in the former the tip is deflected, bifid and with a recurved median tooth.

Fourth, on the face of *M. signoretti* are two smooth brown elevations, not present in *M. slossonæ.*

Fifth, the third joint of the antennæ of *M. slossonæ* is enlarged and curved, my only male of *M. signoretti* lacks the antennæ, except the basal joints, but Fitch does not mention any such character.

Sixth, Fitch says antennæ brownish, in *M. slossonæ* they are pale.

A ♀, probably of *M. signoretti*, from Mt. Washington, has much resemblance to *Chrysopa nigricornis*, but is smaller, and the basal joints of antennæ are more slender and farther apart than in *Chrysopa;* there is no dot on the basal joint, the rest of antennæ is brown; there is a black dot each side near the base of the clypeus, the palpi are pale.

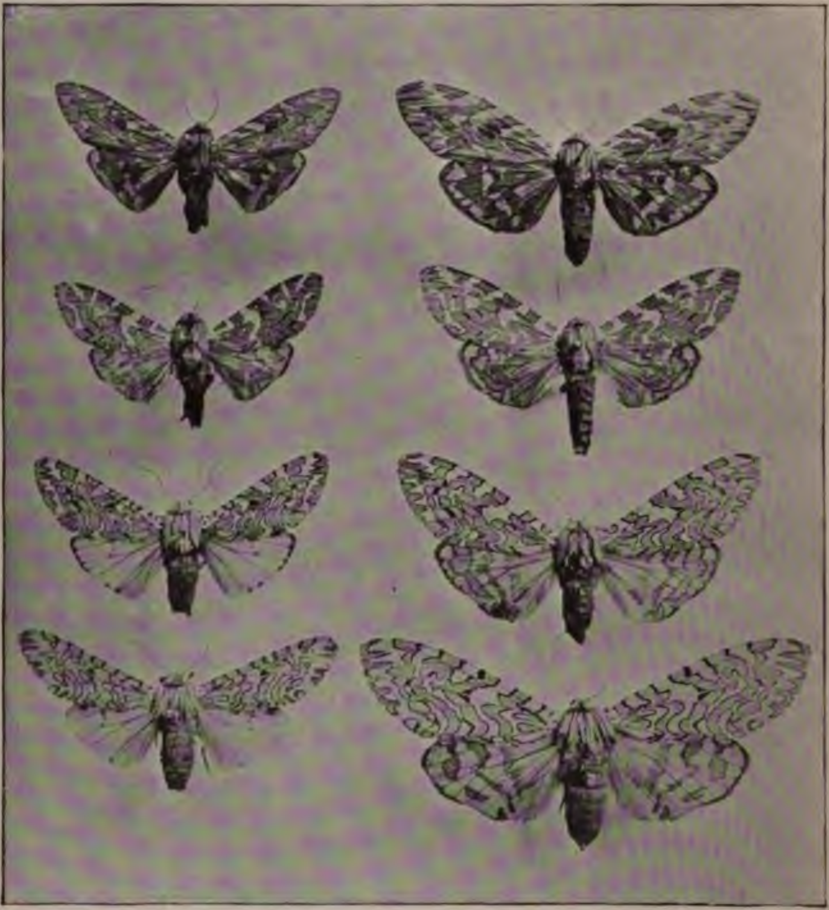
Since the presence of the horn in *Meleoma* is a secondary sexual character, the genus can best be separated from *Chrysopa* by the widely separated and more slender basal joints of the antennæ. *M. signoretti* has fine vertical hairs on the front of the horn, giving it the striated appearance noted by Fitch. *M. slossonæ* appears to be the more common form.

OBITUARY.

T. B. Ashton, of Tonganoxie, Kans., died Dec. 28, 1895, aged 69 years. A native of Washington County, New York; he was always interested in Entomology, and was especially devoted to the Coleoptera. He was one of the charter members and assisted in organizing the Entomological Society of Philadelphia, the latter part of February, 1859, and was the personal friend of such eminent entomologists as Dr. John L. LeConte, E. T. Cresson, of Philadelphia; Dr. Asa Fitch, of New York, and was also well acquainted with many of the leading entomologists of America. He was a skillful and persistent collector of Coleoptera, and gathered a large and valuable collection, which was largely increased by exchanges. Although not a voluminous writer, he occasionally contributed articles to eastern entomological publications, an interesting paper appearing in Entomological News, vol. iv, May, 1893. He had great mechanical ingenuity, making his own cases for his collections. One daughter survives him.

Warren Knaus.

Entomological News for February, was mailed January 31, 1896.



SPECIES OF ARACHNIS.

(See page 124.)

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. VII. APRIL, 1896. No. 4.

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NOTES ON EUROPEAN ENTOMOLOGICAL COLLECTIONS.

By PHILIP P. CALVERT.

(See the NEWS for January, 1896, vol. vii, p. 4.)

IV.—BRUSSELS.

The governmental Musée d'Histoire Naturelle in the Parc Leopold in Brussels, opened in 1891, and famed for its skeletons of gigantic Jurassic and Cretaceous Reptilia, contains an extensive collection of Insects on the uppermost floor. The large room in which they are contained is lighted from above, and, although not separated by partitions from parts of the same floor to which the public is admitted, is open only to students and to special visitors. On an adjoining corridor are smaller rooms for study.

The specimens are contained in rabbeted, glass-topped, wooden boxes arranged as drawers, but with a considerable interval between each one and that next above. The drawer-cases are open in front except for a strip, about three inches wide, at one side by which the drawers of each case are locked in place.

The specimens are being carefully labeled, and a very considerable part of this work has already been completed. The labels employed are of two kinds (1) individual and (2) specific.

1. The ***individual labels***, or those attached to the pin of each specimen, comprise (*a*) a colored locality label, (*b*) a label giving the name of the collection in which the specimen formerly was, together with the name of the specialist by whom this specimen was referred to the species in question in the course of a monographic revision, and (*c*) a label bearing a number. In those cases where the specimen has been used by several successive monographers there are several labels of the kind (*b*).

2. The white ***specific labels***, attached to the bottom of the drawer below the specimens to which they refer, bear the name of the species, a number corresponding to that on label (*c*), and at the right hand end a miniature map of the world on a Mercator projection, about 20 mm. x 12 mm., on which the area of distribution is shown in red.

The policy of the Museum is to devote especial attention to the acquisition of insects of those groups of which collections do not elsewhere exist in Belgium. Thus the Odonata and the Elateridæ are not so extensively represented here for the reason that they are to be found in the collections of the eminent Belgian specialists Baron de Selys-Longchamps and Dr. E. Candeze respectively. In this way a duplication of labor is avoided.

Mons. G. Severin, Aide-Naturaliste in charge of the Insects, who very kindly conducted the writer through the building and pointed out the chief features of interest, stated that the Coleoptera, the Hymenoptera and the Hemiptera are well represented here, the other groups much less so.

The most important contents are :

COLEOPTERA.

Carabidæ.—Coll. Putzeys.

Dytiscidæ, Gyrinidæ, etc.—Coll. Chevrolat, with many types of Aubé, Sharp and Regimbart. A list of these has been published by M. Severin (Ann. Soc. Ent. Belg. xxxvi, pp. 469–478, 1892), in which he estimates the total number of species of these aquatic Coleoptera as 2129, of which the Museum possesses 1301 (299 types) in 6000 specimens, exclusive of the duplicates.

Scarabæidæ, Coprophaga, Melolonthidæ and Dynastidæ.—Coll. Thompson.

Malacodermata.—Coll. Guerin-Méneville.

Heteromera.—Coll. Thompson, very rich.

Curculionidæ.—Coll. Castelnau, including specimens from colls. Dejean, Laferté and Roelofs.

Longicornia.—Coll. Lacordaire, good but not very rich.

Chrysomelidæ.—Colls. Chapuis, Saintpierre.

HYMENOPTERA.

Ichneumonidæ, Braconidæ.—Coll. Wesmael.

LOCAL LIST.

By A. J. SNYDER, Evanston, Ill.

The lists of insects taken by collectors in various localities are always interesting to me. We desire to know where and when to look for certain species. If such lists were more common, and were studied more, much valuable time would be saved by not looking for things in wrong times and seasons. Beginners are discouraged because they think it is impossible to secure a collection of any size unless one can travel or live in the tropics, hence I have made notes of my season's captures and give the species which I have taken within the past season and within a radius of one mile from my house.

North Evanston is thirteen and a half miles from one of the main depots of Chicago. Native timber abounds—oaks ashes, elms and basswoods are predominant forest trees. In my own yard are numerous trees which are kept smeared with molasses and vinegar during the insect season.

My collecting must be done at night and on occasional Saturday afternoons when my duties as teacher will permit. From June 19th to August 8th, my vacation occurred, and I collected in Utah, Idaho and Yellowstone Park. As to this trip I hope to have something to say in the future, but I can never know how many species might have been added to my list had I been at home.

Besides the species named I have taken probably twenty kinds, mostly micros, which are yet unidentified. The *Catocalas*, usually abundant from June to October, were conspicuous by their absence this year. I have been amazed at the method of appearance and the stay of certain species.

Aletia argillacea appeared in abundance one night; a few were seen the following evening, and that was the last of the species.

Hadena arctica for a time crowded every other species away from the bait and then gave place to thousands of *Leucanias*. At the beginning and close of the season *Xylinas* were here in countless numbers; during the middle of the season not one was seen.

Amblyscirtes samoset is perhaps the rarest butterfly in this section. A little girl brought me a dandelion blossom one evening, to which a fresh specimen was clinging. Another evening, on coming in with dark lantern and bottle from collecting, another *A. samoset* was clinging to my clothing. Several more of the species were taken later on blackberry blossoms.

The dates I have given represent the first appearance of the species, or else give the time during which the species was found here. I beg to again recommend to collectors the planting of flowers which are attractive, especially to the *Noctuids*.

The *Verbenas*, *Petunias* and *Nicotiana*, have rendered me the best service. The first capture of the season was made February 21st; the last, November 14th. On this last date three species were taken: *Orthosia ferruginoides*, *Xylina unimoda* and *Peridroma saucia*.

RHOPALOCERA.

Danais archippus, June 11, common
Argynnis idalia, June 11, one
" cybele, June 10, common
" alcestis, August, rare
" bellona, May 5, common
Phyciodes nycteis, May 24, one
" tharos, May 10, common
Grapta interrogationis.
" *a* fabricii, August, common
" *b* umbrosa, August, com.
" comma, April 20, few
Vanessa antiopa, April 20, few
Pyrameis atalanta, June 12, few
" huntera, Sept. 10, com.
" cardui June 15, rare
Limenitis ursula, August, one
" disippus, May 29, several
Neonympha eurytris, June 4, abund.
Libythea bachmani, Aug., one seen
Thecla melinus, Aug. 23, two
Chrysophanus thœ, Aug. 23, two
Lycæna neglecta, May 30, abundant
" comyntas, Aug. 23, two

Pieris protodice, August, few
" rapæ, May, abundant
Meganostoma cæsonia, May and September, abundant
Colias eurytheme, August, two
" philodice, May 6, common
Terias nicippe, August, one
Papilio ajax, June 6, common
" turnus, June 2, one
" cresphontes, June 2, several
" asterias, May 3, several
" troilus, August, two
" philenor, May 30, several
Ancyloxypha numitor, Aug., sev'l
Pamphila zabulon, May 29, com.
" peckius, May 29, com.
" cernes, June, common
Amblyscirtes samoset, May 23, five
Nisoniades martialis, May 31, one
" juvenalis, May 3, two
Pholisora catullus, June 10, one
Eudamus pylades, June 7, one
" tityrus, August, one

TAKEN IN OTHER YEARS, SAME LOCALITY.

Euptoieta claudia, one
Argynnis mynna, several
" aphrodite (?)
Grapta j-album, common 1893
Junonia cœnia, two 1894
Neonympha canthus, common '94
Thecla calanus, common 1894
Thecla titus, several
Feniseca tarquinius, one 1893
Pamphila egeremet, several 1894
" manataaqua, several '94
" verna, common 1894
" metacomet, several 1894

HETEROCERA.

Hemaris thysbe, May 3, several
Amphion nessus, June 7, one
Thyreus abbotii, June 7, one
Deilephila lineata, April 29, abund.
Chœrocampa tersa, August, one
Ampelophaga chœrilus, May, sev'l
" myron, June, several
Protoparce celeus, August, scarce
" carolina, Aug., scarce
Sphinx kalmiæ, July, one.
" eremittus, August, one
Smerinthus geminatus, June 12, four
Paonias astylus, June 12, several
Alypia octomaculata, June, several
Ctenucha virginica, June, one
Euphanessa mendica, June 8, sev'l
Utetheisa bella, Sept. 21, abundant
Arctia rectilinea, June 10, one
" nais, June 12, one
" virguncula, June 12, many
Leucarctia acræa, May 24, one
Spilosoma virginica, June 12, one
" latipennis, June, one
" antigone, June 12, sev'l
Halisidota tessellata, August, one
Datana contracta, June 12, several
Nadala gibbosa, June 12, several
Lophodonta georgica, June 12, one
Platypteryx arcuata.
Attacus cecropia, June 15, two
Actias luna, July 17, one
Telea polyphemus, June, one
Hyperchiria io, June 12, three
Dryocampa rubicunda, July, one
Prionoxystus robiniæ, June 3, two
Arsilonche henrici, May 23, one
Acronycta occidentalis, May, one
" lobelia, May 30, several
" hamamelis, one
" hæsitata, June 4, several
" retardata, June 3
" oblinita, June 3, one
Microcœlia diptheroides, May 31, several
Bryophila lepidula, June 4, one
Agrotis badinoides, Sept. 3, many
" ypsilon, April to Oct. 14, many
Peridroma saucia, April 5 to Oct. 14, many
Noctua baja, August, many.
" normaniana, August, many
" bicarnea, August, many
" c-nigrum, May 22, many
" haruspica, August, few
" clandestina, June 1, several
Feltia subgothica, August, many
" jaculifera, August, many
" herelis, August, few
" venerabilis, September, few
Carneades scandens, Aug. 24, one
" messoria, Sept. 2, one
Mamestra meditata, Aug., abund.
" detracta, June 6, one
" atlantica, one
" grandis, one
" trifolii, May 24, several
" latex, June 7, one
" beanii, May 24, one
" renigera, through season common
" olivacea, Aug., abund.

Mamestra lorea, May 22, abundant
Hadena sputatrix, May to Sept., common
Hadena impulsa, June 11, one
" devastatrix, May, abund.
" arctica, June 3, common
" cariosa, June, several
" vulgaris, June 6, several
" lignicolor, June, several
" quæsita, June, one
" modica, June, common
" fractilinea, June, several
Oligia festivoides, May 30, two
" grata, June 1, one
Perigea luxa, May 30, one
" fabrefacta, 1895, one
Dipterygia scabriuscula, May, sev'l
Hyppa xylinoides, May 17, several
Laphygma frugiperda, Sep., abund.
" obscura, Sept., several
Prodenia lineatella, Sept., common
Euplexia lucipara, May 30, one
Nephelodes minians, var., May, common
" violans, Aug., common
Helotropha reniformis, Aug., sev'l
" atra, August, several
Hydrœcia immanis, Sept. 2, com.
Monodes nucicolora, Aug. 1, one
Leucania pallens, May 22, several
" albilinea, May 24, several
" phragmatidicola, May 22, common
" commoides, June, com.
" unipuncta, May 6 to Nov. 14, common
" pseudargyria, June 1, several
" var. stolata, June, one
Nolophana malana, June 6, one
Caradrina miranda, May 30, one
Pyrophila pyramidoides, Sept., one
Orthodes infirma, May 24, several
" cynica, September, one
Tæniocampa oviduca, May 30, one
" alia, April 6, common
Pyrrhia umbria, April 6, one
Orthosia ferruginoides, Sept. to Nov. 14, abundant
Glæa inulta, Sept. 20, common
Xanthia flavago, 1895, one
Cirrhoedia pampina, Sept., abund.
Scoliopteryx libatrix, May 2, one
Scopelosoma tristigmata, Sept., one
" walkeri, Feb. 28, one
" morrisoni, Feb., five
" devia, April 6, sev'l
Xylina bethunei, April 6, several
" antennata, Oct., several
" laticinerea, April and Nov., several
" unimoda, Nov., abundant
" pexata, April 11, one
Calocampa nupera, April 11, sev'l
" curvimacula, April 11, several
Cucullia asteroides, May 7, one
Ingura abrostoloides, June 3, one
Aletia argillacea, Sept. 18, abund.
Ogdoconta cinereola, June, abund.
" carneola, May 22, com.
Devia purpurigera, Aug. 13, one
Plusia biloba, June 12, several
" verruca, Sept. 20, one
" dyaus, Sept. 20, one
" precationis, common
" ou, Sept. 19, one
" pedalis, Sept. 20, one
" brassicæ, August, common
" oxygramma, Sept., one
" simplex, May, common
Plusiodonta compressipalpis, May 30, one
Heliothis armiger, May 27 to Oct., common
Acontia erastrioides, May 24, com.
Chamyris cerintha, May 27, one
Erastria apicosa, May, several
Galgula subpartita, Sept. 24, one
Drasteria erechtea, April 19, com.
" erichto (?), May 2, sev'l
Hypocala hilli, Sept. 21, one

Euclidia cuspidea, June 1, several
Grammodes smithii, May and September, two
Catocala uxor, June 12, several
" unijuga, June 12, one
" cara, June to Nov., sev'l
" nurus, June to Nov., sev'l
" communis, 1895, one
" angusi, June 7, one
Celiptera frustulum, June 3, several
Parallelia bistriaris, June, abundant
Remigia latipes, June, several
Zale horrida, May 22, several
Pheocyma lunifera, May 17, several
Homoptera edusa, May 10, several
" *a* saundersii, June, sev'l
" *b* lunata, June, several
" edusina, June, several
" *a* atritincta (?), June,
Ysia undularis, June 4, one
Pseudanthrœcia coracias, May, one
Homopyralis tactus, May 10, com.
Pseudaglossa lubricalis, Aug., com.
Epizeuxis aemula, June 7, one
" americalis, Aug., several
Herminia petrealis, Aug. 13, one
Pityolita pedipalalis, June, one
Philometra eumelusalis, June, one
Palthis angulalis, June 15, several
Heterogramma rurigena, May, one
Renia flavipunctalis, May 30, one
Hypena humuli, June 8, several
Hypena scabra, August, several
Caberodes confusaria, June, several
Endropia serrata, June 12, one
" hypocharia, June 7, com.
Thernia fervidaria, Sept. 2, several
Angerona crocataria, June 7, sev'l
Aplodes mimosaria, May 24, one
Eucrostis chloroleucaria, May, one
Ephyra myrtaria, June 6, one
Phasiane mellistrigata, June 12, one
Haematopis grataria, May 11, sev'l
Boarmia polygrammaria, Aug., one
Tephrosia canadaria, May 24, one
Phibalapteryx latirupta, Aug., com.
Biston ursarius, May 23, one
Rheumaptera unangulata, May, one
Ochyria designata, May 4, several
Eupithecia implicata, June, several
Nomophila noctuella, 1895, rare
Pyrausta octomaculata, May, sev'l
" insequalis, May 4, one
Pyralis farinalis, June, several
" olinalis, June 8, one
Crambus albellus, May 23, com.
" vulgivagellus, 1895, com.
" interminellus, 1895, com.
Platyptilia carduidactyla, June, one
Cacœcia rosaceana, June, several
Pædisca scudderiana, June 12, one
Carpocapsa pomonella, Feb., one
Stenoma schlaegeri, May 30, one

Since writing the article for the NEWS, giving list of specimens taken at Evanston, Ill., during 1895, it has become necessary to make an addition. Twice since completing the article the mercury has been to 3° below zero. A heavy snow covered the ground for several weeks, but now the weather is warm, the mercury stands at 53° to-night. The snow has disappeared, and on Christmas eve I have taken twelve moths at sugar.

The moths captured at this, so far as I know, unprecedented late date for this latitude, were as follows:

Xylina unimoda ♂ ♂ ♀, ...	3
Scopelosoma walkeri ♂, ...	1
" *morrisoni* ♂ ♂ ♂ ♂ ♂ ♂ ♀, . .	7
Peridroma saucia ♂, ...	1
Total	12

INSECT COLLECTING AT ELKHART, IND.

R. J. WEITH.

During the Summer of 1895 I had been busy collecting the insects of all orders, and thought it would be of interest to record some of the species that were new to this locality. Having promised some specimens of *Amphion nessus*, on May 29th, I went to the locality where they are usually found; stationed myself on a piece of ground where numerous elm and sugar-maple trees had been cut down a few weeks before, and very soon an *A. nessus* made its appearance, feeding in its nervous flight on the sap still oozing from the stumps. A sweep of the net and I thought an *A. nessus* was mine, but the unevenness of the ground allowed it to escape from the net, as this species, contrary to the habits of other Lepidoptera, does not fly upward, but gets out at the bottom.

Numerous specimens of Muscidæ, *Vespa*, etc., were feeding on the sap, as was also a single *Hololepta fossularis*, the only one taken here by me during twenty years' collecting. A specimen of *Galeruca externa*, an unusual species so far east, taken under loose bark on a fallen tree trunk. The capture of an apparent Hymenopterous insect flying past provéd to be the rare *Gnorimus maculosus*. I have taken two each of *Calosoma frigidum* and *peregrinator* at the electric lights, and plenty of *C. scrutator* and *C. wilcoxi*, never very abundant here before.

Lachnosterna prunina was also plentiful. Water beetles were very scarce, except *Hydrophilus ovatus*, of which I could have filled a basket, but very few *H. triangularis*. *Donacia subtilis*, another new species, very plentiful.

Occasionally an *Asilus sericeus*, preying on *Pompilus* sp. on the margin of the pond, would find its way into my water-beetle net. Have taken over fifty specimens of *Neonympha canthus*, usually scarce here at other seasons, and, contrary to their usual habits, on an open marsh in the glaring sun. Also sixty-nine specimens of *Satyrus alope*, in about two hours, on a little patch of marsh bordering the lake.

Other new Lepidopterous species taken during the season were six specimens of *Argynnis idalia*, one of *Euptoieta claudia* and two of *Philampelus pandora*. Have not seen a specimen of *Calopterix maculata* in four years, previously an abundant species. All orders were fairly scarce during the season, doubtlessly on account of excessive heat and dryness.

ENTOMOLOGICAL NEWS.

Published monthly (except July and August), in charge of the joint publication committees of the Entomological Section of the Academy of Natural Sciences, of Philadelphia, and the American Entomological Society. It will contain not less than 300 pages per annum. It will maintain no free list whatever, but will leave no measure untried to make it a necessity to every student of insect life, so that its very moderate annual subscription may be considered well spent.

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PHILADELPHIA, PA., APRIL, 1896.

DUST.

ONE of the greatest "bug-a-boos" to the bugologist is dust. Dust on the glass or the drawers of cabinets: dust on the boxes containing insects; dust everywhere. Wooden cabinets, unless extraordinarily well made, will admit large quantities of dust. They are apt to warp, and the cracks in the back widen and dust enters. Dust is not such a serious matter in private collections, but in large museum collections, where it is hardly possible to have some one constantly cleaning, it is a great nuisance. In handling boxes or drawers one's fingers soon become black, and often it is difficult to see through the glass of a drawer. The entomological cabinet of the future, whether for drawers or boxes, will undoubtedly be made of metal (tinned sheet iron or aluminum) with a front of the same material closing on rubber. Such a case is used by the ornithologists, and they find it a big improvement over old methods.

SILK-PRODUCING LEPIDOPTERA.—Dr. Dusuzeau, Directeur du Laboratoire d'Etudes de la Soie, Rue St. Polycarpe 7, Lyon, France, desires to obtain, either by way of exchange or purchase, specimens belonging to the groups Saturnides, Bombycides, Lasiocampides, etc., from all parts of the world; the eggs, larvæ and cocoons are also desired, together with information of the food-plant.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

The Flour Moth in Mexico.—Since the discovery of the flour moth, *Ephestia kuehniella* Zell., in bran, meal and cakes in the Mexican exhibit at the World's Fair ("Insect Life," vol. vi, p. 221), we have suspected its presence in Mexico, but have had no positive information regarding it. I am now (March 5, 1896) in receipt of a package of matted flour from a flouring-mill in Saltillo, Mexico, which is literally alive with larvæ and pupæ of the flour moth. The insect has been established in the mill for over a year, and is an alarming pest. The climate is so even there is little or no difference in the attack at any time of the year. It infests all parts of the mill, but is most troublesome in spouts, elevator legs, purifiers and hoppers.—W. G. JOHNSON, Urbana, Ill.

The Hymenopterous Parasite of the Angoumois Grain Moth.—In the year 1883, Mr. F. M. Webster described a parasite of the Angoumois grain moth (*Sitotroga* (*Gelechia*) *cerealella* Ol.), giving it the name *Pteromalus gelechiæ* (12th Rept. St. Ent. Ill. p. 151). The subfamily to which this species belongs, Pteromalinæ, contains many minute forms of very similar appearance and difficult to separate. Recently parasites were reared at the Department of Agriculture from moth-infested corn from Sharpsburg, Texas, which have been compared by Mr. Ashmead with a series in the National Museum from Europe identified as *Dibrachys boucheanus* Ratz. and pronounced by him to be indistinguishable from that species. Further comparison with one of Mr. Webster's types, kindly loaned by Prof. Forbes, and with much other material bred from this moth, shows all of these parasites to belong to one and apparently the same species.

Mr. Ashmead expects soon to give the Pteromalinæ the careful study that they deserve, and it is to be hoped that he will find characters for the separation of the grain moth species from the European *boucheanus* since the former is undoubtedly a primary parasite of *Sitotroga* and has always been considered a very useful auxiliary in the reduction of its grain-destroying host, while the latter, according to Brischke, is invariably hyperparasitic, preying upon the true parasites of such pernicious species as the gypsy moth. Indeed, it was originally described from material bred from a *Microgaster* living upon that moth, and, if it has continued as active, as noted by its describer, must be placed in the category of injurious species. Ratzeburg observed (Ichn. Forstins, 1844, vol. i, p. 196) that this was the most abundant of all the parasites of the gypsy moth, and that from the clusters of *Microgaster* cocoons only about half of the *Microgasters* issued.

What appears to be the same species has been several times reared at this Department under circumstances indicating hyperparasitism, including rearings from the imported cabbage butterfly (*Pieris rapæ*), also from a number of other insects including the imported currant worm (*Nematus ventricosus*) and codling moth, upon which the species was probably also secondary in attack.—F. H. CHITTENDEN.

Peach Insects.—The peach tree, as cultivated at present, is short lived. It comes into bearing more quickly than most other fruit trees, and after bearing a few crops dies, or is taken out to be replaced in newly set orchards. For this short life there are several reasons, all of them more or less under the control of the farmer. There is frequently an absence of knowledge as to the treatment required by the tree, of the proper kind and quantity of plant-food to be furnished, and of the special factors conducive to the best and most vigorous growth in this species.

Accompanying any adverse natural conditions and intensifying them are the attacks of insects of which several species are seriously destructive. Perhaps the most important, take the country through, is the "Peach-borer," the larva of a clear-winged moth, *Sannina exitiosa.* This larva is a white, wrinkled caterpillar, with a brown head and powerful jaws or mandibles, and it works in the sap-wood and partly also in the bark of the trunk at or just below the surface of the ground. There it lies in a mass of gummy exudation and works around the larger roots and trunk, not boring much if any in the wood itself. The flow of sap is, of course, interrupted at these points, and worse than all the profuse "bleeding" tends to seriously impair the vitality of a small tree when even a single larva is at work. On larger trees, in which several may be feeding at one time, the result is correspondingly serious; the fruit sets heavily, perhaps, but the tree is unable to hold it and we get the heavy "June drop." What remains is often enough for a good crop, provided the tree is able to carry it to perfection; but it is rarely able to do even that, and undersized, unsatisfactory fruit results. As injury increases, less fruit is properly matured and the tree becomes unprofitable and is taken out.

The parents of this borer are much less known to the farmer generally. They are on the wing from May to July, their first appearance determined by latitude and are slender, black and wasp-like in appearance. In the male both pairs of wings are transparent and narrow, only the veins being narrowly black marked. In the female, which is somewhat larger and more robust, the fore wings are bluish black, and the abdomen has a broad orange band at about its middle. Eggs are laid, soon after the moths appear, on the bark as near to the surface of the ground as possible. The larvæ hatch in about two weeks, and at once bore into the bark, and in a few days reach the sap-wood, where they continue their feeding until cold weather sets in. In the Southern States they are nearly full grown at that time and do little more feeding in Spring before they form a cocoon out of chips and silk, attached to the trunk close to the surface. In the Northern States the borer becomes little more than two-thirds grown in

Fall and feeds in Spring until well along in June before forming a cocoon. The development is not by any means regular, and often some specimens of a brood live over until much later in the season so that larvæ of two separate generations may occur in a tree at one time.

The usual remedy is "worming," *i. e.*, cutting out the larvæ in Spring and Fall, and if carefully and thoroughly done it checks injury to a great extent. But an objection is that it is almost impossible to get all the larvæ and enough adults mature to continue the infestation each year. Another is that a careless man may do more harm with his knife than the borer would have done, and in all ways it is much better to attempt to keep the borers out altogether. It may be stated that killing the borers, once in the tree, is practically impossible. No mixture that can be applied so as to come into direct contact with and kill them in their burrows can be safely used on the trees. Our best plan is by mechanical means to keep the borers out altogether, and there are several ways of doing this. It must be remembered that the parent moth cannot dig underground, has no mouth parts for gnawing into the bark, and no ovipositor for piercing it. Hence she must lay her egg on the bark above the surface and glew it fast there. If we prevent this our trees are safe. The simplest of all measures is to wrap the base of the tree with newspapers to a height of from 18 inches to 2 feet. Use at least three or four thicknesses of paper, be sure that it is tied tightly and hill up against it so as to cover at least two inches. The moths will not voluntarily lay eggs on this paper, and if they do the young larvæ will not recognize it as food, and will make no attempt to eat through it. This application should be made in May and kept on through July; and usually the paper will last that time. It should be removed in August, and it may then happen that some borers will be found at the upper edge of the part covered by the paper; but if so they can be easily seen and cut out without injury to the tree. Tarred paper may be used instead, and is equally effective; indeed, the use of any textile fabric will answer the same purpose. Wrapping the trunks with cheap cotton material painted with tar paint will serve equally well and should cover the entire trunk. Essential in all these cases is care in putting on the material that the moth cannot reach bare bark at any point.

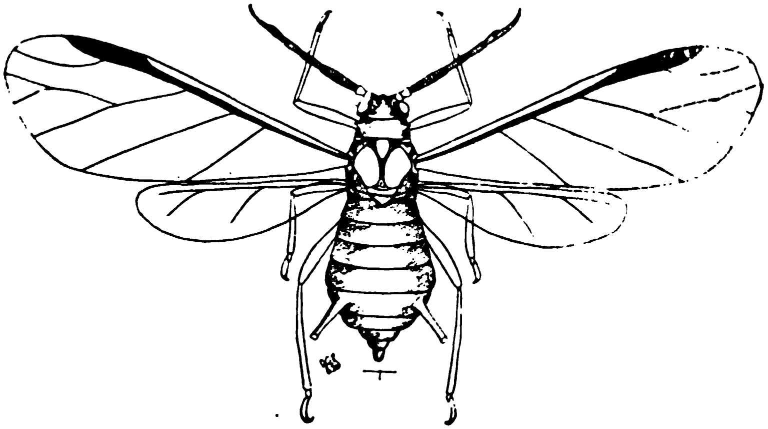
Some growers prefer to use whitewash with or without Paris green, and this is effective so long as it remains intact; but it washes off readily, and is so apt to become imperfect that it is not entirely reliable. Whale oil soap-suds with an admixture of lime and carbolic acid is also used, but is open to the same objection. White-lead paint has proved satisfactory in many hands, and has the merit of lasting well, but many who have used it claim that it injures the trees, and especially when young. One reason for that is that turpentine is used in thinning the paint. If white-lead is used at all, only the best quality should be employed, and it should be mixed with linseed oil only.

Finally, and perhaps best of all, "Raupenleim" or "Dendrolene" can

can be employed. If this is carefully applied it will last an entire season, and if applied on infested trees below the surface so as to cover the points beneath which the borers are at work, or where pupæ are formed, it may, under favorable circumstances, prevent the issuance of the adults.

Briefly re-stated, the best method of dealing with this insect is to prevent its entrance into the tree by means of a mechanical covering of any kind. The covering should be put on early in May; it must be maintained in good condition throughout July.

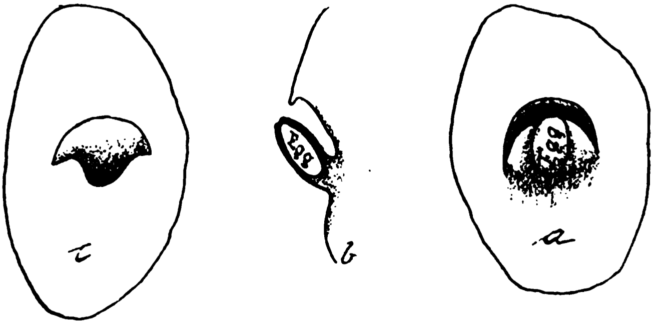
Next after the borer the most important insects troubling peach trees are plant lice, and in particular that species which has been described as *Aphis persicæ-niger*. This insect lives during a large portion of the year on the roots of the trees, but very often in the Spring, and sometimes in the Fall, they may also be found in considerable numbers on the branches. If they attack the branches in any numbers they usually gather near the tips on the tender shoots with the result that these curl, the leaves shrivel and the spur is aborted. Of course no fruit matures on a shoot of that kind nor on the twig from which it starts. On the roots the lice exhaust the vitality of the tree and the latter turns yellow, becomes feeble and eventually dies. Usually, it is then said, the tree had the "yellows." This kind of trouble is more often found in light soils and is generally more harmful where land is naturally poor. If, early in the season, black plant-lice are noticed on the young shoots of the trees, and later the trees are noticed as being weakly, an attack of root-lice may be suspected



The remedial measures to be adopted are of two kinds. Where the insects are noticed upon the shoots, fish-oil soap, used at the rate of one pound in six gallons of water and two ounces of carbolic acid added, will usually prove satisfactory. In connection with this treatment a very heavy top dressing of kainit should be made on the surface of the soil at a time when it will wash into the ground readily. In other words, just before or during a rain, or just after a soaking rain, when the ground is thoroughly wet. This will help to feed and nourish the tree, to stimulate it into renewed activity, and it will also destroy the root lice themselves. The application should be made at the rate of at least a thousand pounds to the acre, and a ton to the acre would be none too heavy. Instead of kainit, ground tobacco may be used with good chances of success. In this case a trench should be dug around the tree at a distance of about two feet from the trunk, and in this trench, which may be of spade width, two inches of tobacco dust may be placed. The tobacco, like the kainit, is a good fertilizer, and is rich in potash. It will become active only when thoroughly wet, and the nicotine coming into contact with the roots of the plants and the insects feeding on them will result in their death. Of the two measures the use of the kainit is to be preferred in my experience.

* * * * * *

Attacking the peach and the plum, though much the most injurious on the latter is the plum curculio, an insect so well known to all growers of fruits that it needs no description. The signs of the injury are noticed on the fruit when it becomes as large as a hazel nut or a little larger, and we get then small crescent-shaped marks numbering from one to a dozen on a single fruit—peach, plum, cherry, apple or pear. In each of these crescent marks an egg is deposited and in a short time the larva hatches and works into the fruit. Most varieties of plums and many peaches drop when infested by the curculio larvæ, but most apples and pears do not fall as the result of curculio injury, but rather the curculio can develop only in such fruit as falls to the ground from other causes. The object of the crescent mark made by the larva is to prevent injury to the egg.



If we cut out the cresent itself we notice that a little flap is loosened, and in cutting through this flap we see that the egg is laid in its middle. It can be seen readily that in this position the loosened tissue ceases growing, but it does not wither or die rapidly, hence no pressure is exerted upon the egg, which is very soft and white. The rapid growth of a vigorous apple is more than the insect can stand, and only in rare instances do larvæ develop; but if the apple falls to the ground and growth ceases there is nothing to prevent the insect from feeding undisturbed and coming to maturity. Dealing with this insect is an unsatisfactory matter. We cannot in any way reach the larvæ by means of a poisonous spray, because it never at any time feeds exposed. When it leaves the fruit it drops to the ground, and at once bores beneath the surface, where it is again out of reach. The beetle goes into Winter quarters long before mid-Summer, and is not again seen until the Spring following, when it attacks the young leaf and flower buds. Here we have an opportunity of reaching it with a poisonous mixture, and the most satisfactory results have been obtained with Paris green, one pound in 175 gallons of water, used when the buds are full and before they have opened. At that time the curculio feeds both on the leaf and flower buds, and there is a good chance of killing the adult before the fruit sets and before it can lay eggs. In many large plum orchards the old remedy of jarring the trees is still resorted to and works satisfactorily. It means that every morning, or at least every other day, depending upon the number of beetles, the round of the orchard must be made, and by a sudden jar on the trees the startled beetles will be induced to drop into a sheet or other receptacle spread ready to receive them. Good practice is to have all the windfalls in an orchard destroyed as fast they drop. In other words, all fallen fruit must be kept cleared up, this can best be done by pasturing hogs or sheep in the orchard. There is no danger in this practice, even if the trees are sprayed, because not enough of the poison falls to the vegetation under the trees to make it at all dangerous to stock of any kind. In feeding upon the windfalls the animals destroy the larvæ, which would otherwise develop in them. It means persistent work to lessen the number of these insects, but if there could be such a thing as cooperation among the fruit-growers and all would adopt these same measures, the injury done would be materially reduced.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

PICTURES for the album of the American Entomological Society: E. T. Cresson, Philadelphia; L'abbe V. A. Huard, Chicoutimi, P. Q. Can.; H. A. Morgan, Baton Rouge, La.; E. A. Smyth, Jr., Blacksburg, Va.; Trevor Kincaid, Seattle, Wash.; F. D. Twogood, River

"I am very much pleased to notice the growth of your journal (ENTOMOLOGICAL NEWS), as it certainly deserves to grow and flourish; it is the cheapest and best entomological paper published, European journals not excepted. Wishing you further success, I am,

" H. A., Elberfield, Germany."

AT a meeting of the Ohio State Horticultural Society, February 20th, the secretary was unanimously instructed to correspond with the societies of other States with reference to sending delegates to a national convention to discuss the best means for preventing the introduction and diffusion of insect and fungus pests, and measures for destroying both these and such as are indigenous to the country.

A young man and his friend of Utoptera,
Went one day to catch Lepidoptera.
He saw one sail by,
Jumped for it too high,
And landed amidst Hymenoptera.

He used words that are found in Theology,
And then to his friend made apology.
I am sorry to say
I must bid you good day,
For I've had quite enough Entomology.—(*Anonymous*)

SNAKE BITES.—In reply to Mr. G. R. Pilate's inquiry for a sure remedy for snake bites I beg to state that a man who makes a business of collecting rattle snakes for the Chinese doctors, says that the *gall* of a rattle snake is a *sure* cure for their "bites." He has been bitten a half dozen times and the gall from a rattler has never failed to work a complete cure, except once, when he could not get at all the punctures, when medical aid had to be summoned. He says that after applying the gall there is no more pain than from a bee sting.—BURTON L. CUNNINGHAM, Fort Klamath, Oregon.

DOBELL, in his travels in Kamtschatka, relates when the Chinese wish to enjoy a cricket fight they place two males in an earthen bowl six or eight inches in diameter. The owner of each tickles his prize-fighter with a feather, which makes them run around the bowl in different directions; they frequently meet and jostle each other as they pass. After several such meetings they at last lose their temper, and ere long, becoming greatly exasperated, they fight with such fury that both are literally torn limb from limb.

WHOLESALE MASSACRE.—The French war office has recently been occupied with a large number of inventions for the wholesale massacre of the enemy in the next great war. One of the inventors proposes that the Minister of War should subjugate and train squadrons of horse flies. These novel warriors, it is suggested, would be fed on blood smeared beneath a thin skin covering on dummy figures dressed as soldiers of the

Triple Alliance. When diplomatic relations were near a breaking point the flies would have the juice of certain poisonous plants added to their daily food, and when war should be declared the French army would merely have to send them as an advance guard in the path of the enemy. —*Newspaper.*

THE TRANSACTIONS of the American Entomological Society for January-March, 1896 (vol. xxxiii, No. 1), soon to issue, will contain the following papers: The Taxonomic Value of the Antennæ of Lepidoptera, by Donaldson Bodine; New North American Spiders and Mites, by Nathan Banks; Supplement to the Crabroninæ of Boreal America, by Wm. J. Fox; The Dipterous genera *Tachytrechus* and *Macellocerus* by J. M. Aldrich; A monograph of the genus *Synergus* Hartig, by C. P. Gillette.

LIMENITIS ARTHEMIS.—This species was seen here this season for the first time. On June 30th a ♀ *arthemis* and ♂ *ursula* were taken sitting together on leaf of shrub by the wayside—no hill of any size within four miles. On July 23d another specimen, much worn, was seen near the same spot. On July 26 and 27th a number of specimens were seen, much worn and evidently the last of the brood, in the hill country about Cummington, twenty-five miles northwest of here.

Strangalia bicolor was also taken this season for the first time; it easily escapes the notice of the coleopterist on account of its extreme shyness and resemblance to a Hymenopter in flight.

Saperda obliqua is generally found near the tip of an alder branch, but easily escapes notice on account of its great resemblance to a withered leaflet. It also differs from the other members of its genus, which are shy insects, in that it sits perfectly motionless with antennæ extended forward and clinging tightly to the branch when seized. I have also found it on birch.

Purpuricenus humeralis I had heretofore only taken on willow, but this season I took a number of specimens at different times from a wounded branch of scrub oak; one specimen was taken on flowers and one on a cluster of black raspberries; the writer could not help being struck by the similarity of the colors of the beetle with those of the ripe and ripening berries.

Myodites stylopides. This curious beetle had only been found by the writer on two occasions on wild flowers until two years ago. It was then found in some numbers on the flowers of thoroughwort in a ravine at Montgomery, Mass. This season the locality was visited again on July 20th, and although the plant was not yet in blossom, several specimens were taken on the flower buds.

Is not *Chlænius prasinus* a Southern species? I took it this season at electric light.—FRED. KNAB, Chicopee, Mass.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be limited to twenty-five for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the anatomy of insects, however, whether relating to American or exotic species will be recorded.

1. TRANSACTIONS OF THE ROYAL SOCIETY OF SOUTH AUSTRALIA, xix, pt. 2.—Notes on Victorian and other Blattariæ and descriptions of new species, J. G. O. Tepper. Descriptions of new genera and species of Australian Coleoptera, T. Blackburn.

2. MITTHEILUNGEN AUS DEM ROEMER-MUSEUM, Hildesheim, No. 3.—The Apatelidæ, A. R. Grote.

3. TRANSACTIONS OF THE AMERICAN MICROSCOPICAL SOCIETY, xvii. —Some peculiarities of the mouth-parts and ovipositor of *Cicada septendecem*, J. D. Hyatt.

4. ARCHIVES DE BIOLOGIE, xiv, fasc. 2.—Physiological studies on the Orthoptera, L. Cuénot.

5. MEMOIRES DE L'ACADEMIE ROYALE DES SCIENCES, etc., de Danemark (D. Kgl. Danske Videnskabernes Selskab Skrifter), viii, No. 1.—The lateral organs of the larvæ of the Scarabæidæ, F. Meinert.

6. TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON, 1895, pt. 5.—President's address: The Speculative Method in Entomology, R. Meldola.

7. THE INTERNATIONAL JOURNAL OF MICROSCOPY AND NATURAL SCIENCE, pt. 29.—Predaceous and parasitic enemies of Aphides (including a study of hyper-parasites), pt. 3, H. C. A. Vine. The origin of insect transformations, G. H. Bryan.

8. JOURNAL OF THE TRINIDAD FIELD NATURALISTS' CLUB, ii, No. 11. —Description of a new genus and species of Proctotrypid bred by Mr. F. W. Urich from an Embiid, W. H. Ashmead. The cattle fly (*Compsomyia macellaria*), C. W. Meaden.

9. THE ENTOMOLOGIST, London, No. 393.—Descriptions of previously undescribed species of Dimorphina in the Natural History Museum, A. G. Butler. New experiments on the seasonal dimorphism of Lepidoptera, A. Weismann (from the German by W. E. Nicholson). Senses of insects, G. A. K. Marshall. A new scale-insect infesting date-palms, T. D. A. Cockerell.

10. THE KANSAS UNIVERSITY QUARTERLY, iv, No. 3.—Bibliography of North American Dipterology, 1878–1895, S. W. Williston. Fissicorn Tachinidæ, ibid. List of Asilidæ, supplementary to Osten Sacken's Catalogue of North American Diptera, 1878–1895, W. A. Snow.

11. PROCEEDINGS OF THE DAVENPORT ACADEMY OF NATURAL SCIENCES, vi, [Extract].—A list of Coleoptera from the southern shore of Lake Superior, with remarks on geographical distribution, H. F. Wickham.

12. ANNALS AND MAGAZINE OF NATURAL HISTORY, February, 1896.—New genera and species of Pyralidæ, Thyrididæ and Epiplemiidæ (cont.), W. Warren. *Atta* (*Œcodoma*) *cephalotes* Latr., "The Soldier." J. H. Hart. On the presence of Wood-Mason's stridulating-organ in *Trechona zebrata*, R. I. Pocock.

13. THE BOTANICAL GAZETTE, February, 1896.—Flowers and insects, C. Robertson.

14. PSYCHE, a journal of entomology, March, 1896.—The hibernation of Aphides, C. M. Weed. Oviposition and hatching of *Thanaos juvenalis*, J. W. Folsom. Preliminary diagnoses of new Coccidæ (cont.), T. D. A. Cockerell. Some species of *Oxybelus* found in New Mexico, T. D. A. Cockerell and C. F. Baker. New Homoptera received from the New Mexico Agricultural Experiment Station, ii, C. F. Baker.

15. ARCHIVES DE ZOOLOGIE EXPERIMENTALE ET GENERALE (3), iii, No. 4.—Study of the lymphatic glands of some Hemiptera, A. Kawalevsky.

16. LE NATURALISTE CANADIEN, January, 1896.—The last descriptions of l'Abbe Provancher (continued in February number).

17. THE AMERICAN NATURALIST, March, 1896.—On certain Geophilidæ described by Meinert, F. Cook.

18. THE CANADIAN ENTOMOLOGIST, March, 1896.—*Ceutorhynchus napi* or *Ceutorhynchus rapæ*, F. M. Webster. Remarkable work of insects, W. Trealease. A few new spiders, N. Banks. A reply concerning *Noctua* and *Agrotis*, A. R. Grote. The Coleoptera of Canada, xv, H. F. Wickham. Canadian Hymenoptera (No. 7), W. H. Harrington. On the structural affinities of the genus *Demas*, J. W. Tutt. A new Coccid from Texas, T. D. A. Cockerell. Photographs without shadows, W. E. Rumsey. A new *Typhlopsylla* from Mexico, C. F. Baker.

19. UNIVERSITY OF MINNESOTA AGRICULTURAL EXPERIMENT STATION (Division of Entomology), Bulletin No. 43.—Insects injurious in 1895, Otto Lugger.

20. THE ENTOMOLOGIST'S RECORD, etc., March, 1896.—The resting habit of insects as exhibited in the phenomena of hibernation and æstivism, W. S. Riding. The type of *Angronoma*, A. R. Grote.

21. THE ENTOMOLOGIST'S MONTHLY MAGAZINE, March, 1896.—An experiment bearing on the number of larval instars, and the distinctness of larval and pupal instars in Lepidoptera, T. A. Chapman.

22. BULLETIN DE LA ACADEMIE ROYALE DE BELGIQUE, xxx, No. 11.—How flowers attract insects, F. Plateau.

23. CATALOGUS HYMENOPTERORUM, . . . vol. x, C. G. de Dalla Torre, Leipzig, 1896.—This part deals with the bees united under the head Apidæ. Workers will probably be surprised to see *Andrena* changed to *Anthrena; Nomia* and *Eunomia* united as one genus; and the synonymizing of *Diadasia*, *Emphor*, *Melissodes*, *Synhalonia*, *Tetralonia* and *Xenoglossa* with *Eucera*. *Podalirius* is to replace *Anthophora*, *Entechnia*, *Clisodon* and *Habropoda*, the three latter, however, being regarded as subgenera. *Bombomelecta* is regarded as a synonym of *Melecta*. *Heriades* is spelled *Eriades*, and includes *Chelostoma*. Too much faith cannot be placed in the localities given for some of the species inasmuch as *Epeolus rufoclypeus*, said to come from Cuba, and *Megachile martindalei*, *multidens* and *pedalis*, said to come from Indiana, were all described from Jamaica, West Indies! *Ammobates* is to replace *Phileremus*, the latter being a synonym of the former. While much of this uniting of genera is no doubt justified, yet we venture to predict that many of the so-called synonyms will yet stand as distinct genera. The work is quite voluminous, including 643 pages, and brings the list of species and bibliography down to the end of 1893.—F.

INDEX TO THE PRECEDING LITERATURE.

The number after each author's name in this index refers to the journal, as numbered in the preceding literature, in which that author's paper is published; * denotes that the paper in question contains descriptions of new North American forms.

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MYRIAPODA.

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ARACHNIDA.

Pocock 12, Banks 18*.

ORTHOPTERA.

Tepper 1, Cuénot 4.

HEMIPTERA.

Hyatt 3, Cockerell 9*, 14, 18*, Weed 14, Baker 14*, Kowalevsky 15.

COLEOPTERA.

Blackburn 1, Meinert 5, Wickham 11, Webster 18.

DIPTERA.

Meaden 8, Williston 9 (two), Snow 9.

LEPIDOPTERA.

Grote 2, 18, 20, Butler 9, Wasmann 9, Warren 12, Folsom 14, Trealease 18, Tutt 18, Chapman 21.

HYMENOPTERA.

Ashmead 8*, Hart 12, Cockerell and Baker 14*, Provancher 16*, Wickham 18, Harrington 18*, Dalla Torre 23.

ECONOMIC ENTOMOLOGY.

Lugger 19.

Doings of Societies.

PHILADELPHIA, March 10, 1896.

A stated meeting of the Feldman Collecting Social was held at the residence of Mr. H. W. Wenzel, 1509 S. 13th Street. Members present: Messrs. Bland, H. W. Wenzel, Johnson, Boerner, Seiss, Castle, E. Wenzel, Laurent, Hoyer, Fox and Schmitz. Honorary members: Dr. Geo. H. Horn and Prof. John B. Smith. Meeting called to order at 9 P. M., President Bland presiding. Under written communications Mr. Fox read a paper giving the history of the founding of the Social which he had prepared for publication in the NEWS.

Dr. Horn spoke on some studies in *Ludius* made at the request of Mr. Champion, who is engaged on writing up a history of Elateridæ, which showed that our Northern species are distinct from those of Mexico. *L. hepaticus* and *texanus* have the prosternum oblique, and when seen in profile, uninterrupted; there is a species from Lower California and Arizona closely resembling *texanus*, which has an emargination when seen in profile. Dr. Horn continued with remarks on some of the difficulties encountered in a study of Oedemeridæ, and showed that while a character may be admissable for the separation of genera, it would be found in a nearby genus that species must be admitted with and without the same character. It was indicated that *Calopus* and *Oxacis* must be each separated in two genera.

Relative to a discussion on the question of the possibility of evolution in some orders of insects, Prof. Smith remarked that even the classification of the orders themselves and their mode of evolution or descent was not yet satisfactorily settled. As a result of his studies he believed that a branching of the insects took place in the Thysanura, and that from them were developed on one side the Hemiptera, and on the other side all other orders; that is to say, that the one order, Hemiptera represented a branch of equal value, though not equal in development to all other orders. The Hemiptera type proved well adapted to sustain itself, but had little power of variation, thence there is a remarkable similarity in certain structural characters throughout the order. The mandibulate type proved to possess unlimited powers of variability and branched in every direction. The best comparison to make would be a tree branching from the seed, of which one shoot extended upward without branches and with only a few short spurs or twigs and a crown of leaves at the tip, while a second trunk branched soon after reaching above ground and sent off vigorous shoots from all the branches in every direction, making a symmetrical tree at the side of the flag staff.

Apropos of Dr. Skinner's remarks at the January meeting in reference to arrangement of the females in the cabinets, Mr. Laurent remarked that he thought it made but little difference how the specimens were arranged, that personally he preferred to arrange the larger species one above the other, and to indicate in his check-list by the use of the characters, denoting male and female, as to what sex or sexes were represented in his collection, by which means he has but to look over his list when he can easily ascertain what species or sex he is short of by simply noting those which are unmarked.

Dr. Horn stated that he thought every collector should arrange his specimens to suit his own fancy or convenience and purposes of study.

Mr. Fox moved that a vote of thanks be extended to Dr.

Skinner for entertaining the Social so pleasantly at the last meeting.

No further business being presented the meeting adjourned to the annex at 10.30.

Theo. H. Schmitz, *Secretary*.

Entomological Section of the Chicago Academy of Sciences.—The regular meeting was held in the Matthew Laflin Memorial Building, Lincoln Park, Friday, March 20, at 8 o'clock P. M. The genus *Phyciodes* was studied, and members were requested to bring species of that genus for comparison.

Arthur J. Snyder, *Recorder*.

American Entomological Society.

PROCEEDINGS OF MEETINGS.

December 9, 1895.

The regular annual meeting was held this evening at the Hall S. W. cor. 19th and Race Streets. Meeting called to order at 8.20 P. M., President, Dr. Geo. H. Horn in the chair. Members present: Dr. Horn, E. T. Cresson, Welles, Skinner, Liebeck, Johnson, Seiss, Heilprin, G. B. Cresson, Fox, Ridings. Visitors: Reinick, Castle, Luccareni. This being a business meeting such details are herein omitted. Mr. Haimbach and Dr. H. G. Griffith were duly elected members. At the annual election the following were elected to office and committees:

President—Geo. H. Horn, M.D.
Vice-President—Philip P. Calvert.
Treasurer—E. T. Cresson.
Recording Secretary—J. H. Ridings.
Corresponding Secretary—Wm. J. Fox.
Librarian—Geo. B. Cresson.
Curator—Henry Skinner, M.D.

Executive Committee:
Philip Laurent,
Charles Liebeck,
C. Few Seiss.

Publication Committee:
E. T. Cresson,
C. A. Blake,
B. H. Smith.

Finance Committee:
J. W. McAllister,
C. S. Welles,
Chas. C. Cresson.

J. H. Ridings, *Rec. Sec'y*.

FEBRUARY 27, 1896.

Meeting held this evening at 8 P. M., in the new quarters at The Academy of Natural Sciences, President Horn in the chair. Members present: Dr. Horn, E. T. Cresson, Liebeck, Dr. Skinner, Laurent, G. B. Cresson, Seiss, Welles, Johnson. Fox, Ridings, Dr. Griffith. Visitors: Dr. Castle, Prof. Holt, Reinick, Luccareni, Kemp, Westcott, Mr. Lancaster Thomas and Mrs. C. B. Aaron. Dr. Skinner, Curator, reported that almost all the property of the Society had been removed from the rooms in the lower hall formerly occupied. The amount of space now secured, and the distribution of material, show how very inadequate were our former quarters. The Publication Committee reported in favor of the publication of a paper by Dr. J. L. Hancock, on the Illinois grouse locusts. Dr. Skinner spoke in regard to the proper labeling of specimens. He stated that fully seventy-five per cent. of the insects in the collection of the Society were without locality labels to show where the insects had been taken. It was claimed that such labels were a necessary adjunct to the proper study of collections by those interested, and they should be placed on the *pins* of all specimens. The speaker asked the President his opinion of political boundaries in the make up of scientific collections, and especially in reference to Lower California. The President replied, explaining why Lower California had been included in the fauna of this country. How Dr. LeConte in his descriptions of insects from that locality had been led to include them with our own, and gave instances of the usefulness of so doing. He further stated that a smaller percentage of tropical insects are found there than in Texas. Dr. Skinner exhibited a book presented to the Society in 1877 by Mrs. Lucy Say. It represented local Lepidoptera prepared by gumming them on to paper and then peeling off the membrane leaving the scales. This, when neatly done, looks like a perfect colored drawing of the insect. Two bound volumes of papers by Dr. John Hamilton were presented by the author. The thanks of the Society were voted to the kind donor. The President announced the death of Mr. T. B. Ashton, of Tonganoxie, Kans., one of the early members of the Society, and spoke of the interest shown by the deceased in its welfare in its younger days.

J. H. RIDINGS, *Rec. Sec'y.*

The following papers were read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS:

THE GENUS OCHTHERA.

By WILLIAM MORTON WHEELER, Ph.D.
(University of Chicago.)

The genus *Ochthera* is noteworthy in several particulars. It is the most striking, and, probably for that reason, the oldest genus in the family Ephydridæ, having been founded by Latreille as early as 1804. The most conspicuous character of the flies of this genus is the peculiar development of the fore legs, which have taken on a raptorial function. The fore coxa is greatly lengthened and thickened and very mobile, the femur enormously enlarged, and the tibia, which is curved and provided with a strong spine at its tip, may be closed up tightly against the bulging face of the femur. This is essentially the same structural modification which is met with in the fore legs of the Mantidæ (Orthoptera), Mantispidæ (Neuroptera), Nepidæ, Belostomidæ, Naucoridæ (Hemiptera) and in the second maxillipeds of the stomatopod *Squilla* among the Crustacea. Undoubtedly these are true cases of parallelism, the legs having assumed the same raptorial form under the stress of similar conditions, but independently in the different orders.

The genus *Ochthera* is poorly represented in Europe (two species) as compared with North America. Besides *O. mantis* Degeer, which is common to both continents, Loew described (Monog. I, pp. 159–162) three species from this country. Prof. Williston has discovered another species from St. Vincent, W. I.* A description is here given of a sixth species with notes on some of the known forms:

Ochthera lauta n. sp. ♀.—Length 3.7 mm.; length of wings 3.5 mm. Antennæ of the usual form, black; clypeus very small; face very narrow, silvery-white, with scarcely a tinge of yellow; in the middle just below the antennæ a shining black, rather low and rounded protuberance, from which a median black groove extends nearly to the clypeus. On either side of this median groove there is a somewhat broader and curved lateral groove, and another of a similar trend running close to the orbit. On either side a series of eight linear black depressions radiates mesially

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* Prof. Williston has generously loaned me his type specimens of this species. I am also indebted to Mr. W. A. Snow for several specimens of *O. mantis* from different localities.

from the orbital groove. Front and occiput shining metallic blue, the former with a small velvety black spot on either side near the upper orbit. Cheeks, thorax and posterior pleuræ metallic silvery, not very shining; anterior pleuræ shining black, with a steel-blue reflection. The dorsal surface of the thorax with three longitudinal ferruginous vittæ of about equal length, but not reaching to the metallic silvery scutellum. Ground color of the abdomen shining coppery, somewhat dimmed by a layer of whitish dust. Fore coxæ blue-black on the outer faces, with a thick patch of golden yellow dust at their bases; femora and tibiæ of all the legs dark steel-blue dusted with white; hind tibiæ decidedly arcuate. Inner surfaces of the raptorial fore legs shining black with little dust; tarsi red, except the last joint, which is black, and the considerably swollen first joint of the hind tarsi, which is concolorous with the femora and tibiæ. Wings hyaline, with light yellow veins, only the costal vein darker where it rounds the tip of the wing; halteres pale yellow.

One specimen taken in sweepings near Milwaukee, Wis., June 23, 1895.

This species is readily distinguished from other described forms by the conspicuous, ferruginous bands on the thorax, and by the peculiar facial markings, although in the latter character it resembles *O. exculpta* Loew from Cuba. The radiating orbital grooves, however, are replaced by "impressed, rather coarse dots" in the Cuban species, which, besides a marked difference in the color of the front and legs, has the first joint of the hind tarsi "very little swollen."

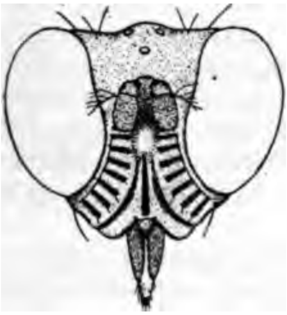

Fig. 1.—Face of *Ochthera lauta* n. sp.

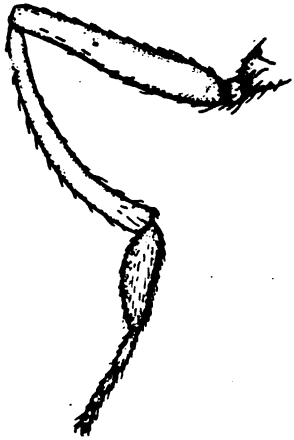

Fig. 2.—Hind leg of *Ochthera lauta* n. sp.

Ochthera mantis Degeer.

This species is widely distributed over the United States. Specimens from the following localities have come under my notice: Connecticut (S. W. Williston), Wisconsin, Illinois and Nebraska (W. M. Wheeler), Lusk, Wyoming (W. A. Snow and W. M. Wheeler); Little Wind River, Wyoming (W. M. Wheeler); Douglas County, Kansas (University of Kansas coll.); California (Baron). Although the color of the face varies in the different specimens—a fact which Loew also observed—they all belong to one species. In some individuals the three ferruginous bands of *O. lauta* are represented by faint, opaque, brown stripes. *O. mantis* is the largest of our species, many specimens measuring 5 mm.

O. cuprilineata Williston.—The three thoracic bands are metallic-violet bordered with cupreous; the middle of the face has a rather low and somewhat wrinkled metallic-green protuberance with a depression in its middle, but otherwise the face is smooth and yellow, resembling the face of the preceding species.

O. tuberculata Loew.—One specimen from Milwaukee, Wis., agrees well with Loew's description. The polished steel blue outer surface of the upper half of the middle tibia is a character which I do not find in my specimens of *O. mantis.* The first joint of the hind tarsi is considerably swollen, like that of *O. lauta.*

The North American species of *Ochthera* may be tabulated as follows:

1.	Thorax with ferruginous or metallic vittæ	2.
	Thorax without, or with very indistinct vittæ	3.
2.	Face with impressed black lines radiating from an orbital groove.	**lauta** n. sp.
	Face without such impressed lines	**cuprilineata** Williston.
3.	Face with black furrows and dots	**exculpta** Loew.
	Face without black furrows and dots	4.
4.	First joint of hind tarsi but little swollen	**mantis** Degeer.
	First joint of hind tarsi considerably swollen	5.
5	Face broad, tarsi black	**rapax** Loew.
	Face narrow, tarsi red	**tuberculata** Loew.

A COMPARISON OF THE NORTH AMERICAN SPECIES OF ARACHNIS, WITH DESCRIPTION OF A NEW SPECIES.

By Dr. RODRIGUES OTTOLENGUI.

(See Plate IV.)

In ENTOMOLOGICAL NEWS, vol. iv, p. 140, is a description of a new *Arachnis* by Messrs. Neumoegen and Dyar. At this place it is called a new variety of *Arachnis picta*, and the name *citra* is given. In "The Revision of the Bombyces" *citra* is called a lacal race of *picta*.

From material before me I believe that I can establish the fact that *citra* is not a variety of the Californian *picta*, but is much more closely allied to another species, which I have decided to call *Arachnis maia*.

In this connection I may make a statement of some interest. I believe that *citra* is a distinct species, as is also *maia*, its nearest ally. Nevertheless I have specimens of *picta*, reared from a single brood of larvæ, among which is one in which the creamy ground color gives place to yellow, and this difference in color is one of the prime distinctions between *citra* and *maia*, so that it may be proven by future discoveries that one of these forms is either a variety or a local race of the other. With this possibility in mind I may quote from the original description of *citra* the following paragraph: "Mr. Bruce, who caught these charming insects and who suggested the varietal name, writes as follows: 'This form (*citra*) is found nearly on the western border of Colorado, at low elevation (6000 feet), and is very constant in color. I have them even a little pinker, and not quite so yellow. The ordinary form is not found at that place at all, yet is common 120 miles east of there, and I have reared a good many from females taken in Arkansas Valley, all being the ordinary form. It (*citra*) is so local and constant in color it is surely worthy of a name.' "

By "ordinary form" in the above paragraph Mr. Bruce meant *picta*, but it happens that the true *picta* does not occur in Colorado at all, and what he mistook for *picta* is what I am about to describe as *maia*.

Should it be learned hereafter that *citra* and *maia* are but varieties, one of the other, I understand that, according to the rules, the specific name would ordinarily be *citra*, and the varietal name *maia*. But it seems to me that this would be a foolish adherence to rule, because, in the first place, we have *aulea* and *picta*, both gray forms, in the latter of which, at least, we have an occasional tendency towards yellow.

But more especially because of the following: *citra* was described from the Neumoegen collection, and was called a variety of *picta*, ***after comparison with the specimens in the Neumoegen collection labeled picta.*** Now I find that these specimens, ***supposed to be the Californian picta, are really the Colorado maia.*** Thus it would seem but proper to correct this error at the start, and if one be the variety of the other, the gray form should be the ground form, as it is throughout the genus.

After close study of the material at hand, which embraces three pairs of each—*citra*, *maia* and *picta*, I am convinced that we have to do with three distinct species, and I will first describe the new species *maia*, and then point out differential characteristics:

Arachnis maia nov. spec. *Male.*—Head gray between the eyes, white above, a black line between. Palpi vermilion, with a few whitish scales. Prothorax white, each half having a gray spot heavily outlined with black; patagiæ gray, outlined with black, white showing along outer margin. Thorax gray, bordered with black, and a double median black line, separating posteriorly, showing white between (the ground color of this genus is white, but the gray pattern is so heavy that it will be easier to describe it reversely). Primaries: upper side gray; all veins white, faintly outlined with black and terminating at the margin in a minute triangle of white, the base at the margin. The whole surface of the wing is reticulated with white spots, dashes and bars, there being three more or less continuous bands outwardly. All these white markings are heavily bordered with black, the submarginal band being solidly black in places. The marginal band is sharply dentate, one tooth extending between each vein and reaching nearly to the outer margin. Reverse: the under side is slate color, crossed by bands which practically agree with the upper side. The marginal band is white, and the submarginal band is white near the costa; otherwise the bands are orange, but there is a tendency in this species towards vermilion, replacing the orange except at the costa, where the orange persists. In one male before me (Las Vegas) there is no vermilion, while in another (Colorado) the vermilion has replaced the orange, except the narrowest streak along the costa. Secondaries: upper side pale vermilion, the middle third hyaline; along the costal margin three large gray spots margined with black, the spaces between being orange. The outer margin is a narrow black band occasionally broken up into spots, nearly or quite disappearing, two spots (the outer being the larger) at the termination of the submedian veins being apparently constant. Reverse: the under side is the same, except that between the costal spots the color is white instead of orange. Abdomen vermilion above, with a narrow dorsal median band of black, of uniform width; below white; laterally a narrow band consisting of gray spots margined with black.

Female.—Head, thorax and primaries same as male, the replacing of the orange with vermilion on the under side of primaries, except along the costa, being more marked than in the male. The secondaries are vermilion, bordered at the outer margin by narrow band of gray, which is broken, so that a spot shows at the termination of the second submedian vein. The wing is crossed by three irregular gray bands, of which the outer is the widest, the three becoming confluent near the anal angle. These bands are bordered with black; the basal area is vermilion. On the under side the secondaries show similar markings, the vermilion giving place to white in places, and to orange along the costa, more especially near the base; otherwise the basal area is vermilion. The abdomen is vermilion above and white below. On the dorsal aspect of each segment is a gray spot, margined with black, together forming a median band in width equaling one-third of that of the abdomen; laterally a row of minute gray spots. On the last segment the dorsal and ventral surfaces are divided by an orange spot. On the ventral surface two sublateral and one median row of three gray spots, the former small, and the latter united into a triangular spot of considerable size. Expanse: ♂ 45 mm.; ♀ from 55–60 mm.

Types: male from Mexico, and female from Colorado, in collection of the author. Male coll. Mr. Doll, and female in coll. Mr. Dyar, both from Colorado. With the exception of the Las Vegas specimen these insects were captured by Mr. Bruce.

In the plate which accompanies this article the upper figures are male and female of *aulea*, the second pair are typical *picta*, the third *maia* and the last *citra*.

The following is a comparison of the species showing the chief marks of distinction:

COLORATION.

Aulea.—Primaries, upper side, dark slate and creamy-white. Secondaries crimson and blackish; under side crimson and blackish, with white along the costa of secondaries in females.

Picta.—Primaries, upper side, pale slate and creamy-white. Secondaries pale slate and carmine; under side pale slate and orange, the latter replaced with carmine on lower half of secondaries.

Maia.—Primaries gray and white, latter outlined heavily with black. Secondaries vermilion and gray, hyaline in males; under side gray, vermilion, white and orange, the colors predominating in the order named.

Citra.—Primaries light gray and lemon-yellow, with black outlines. Secondaries vermilion and gray; under side: primaries yellow and gray, with white outer band; secondaries: costal third yellow, rest vermilion, bands gray. Males, secondaries subhyaline.

BANDS.

Aulea.—Primaries: bands distinct near costa, fading away below; marginal band faint. Secondaries: blackish bands very wide; bands one and two confluent, except at costa.

Picta.—Primaries: bands more distinct; marginal band slightly dentate at apex and discounected at vein six; band two the widest, crossing the wing uninterruptedly and forming somewhat the figure of an interrogation mark (?). Secondaries: inner band continuous, median and outer bands disconnected, but confluent near anal angle; in the female the inner band is widest, and all three are confluent at anal angle.

Maia.—Marginal band the most conspicuous, dentate throughout and connected at vein six; band two often disconnected and constantly narrowed by a heavy, triangular, black spot at the bifurcation of the median vein. Secondaries of male hyaline, of female crossed by three continuous gray bands, of which the outer is the widest; the three bands united near anal angle.

Citra.—Primaries: all the bands continuous across the wing; marginal band the most conspicuous in the male, and marginal and band two equally so in the female; marginal band dentate; band two as in *picta*, but showing the triangulate black spot of *maia*. Secondaries of male subhyaline, of female crossed by three bands; the inner band is continuous, the median band is sometimes continuous and occasionally broken into two parts; the outer band is divided into three.

BASAL SPACE.

Aulea.—Base of secondaries blackish; inner margin blackish.
Picta.—Base of secondaries carmine and pale slate; inner margin slate.
Maia.—Base of secondaries vermilion; inner margin vermilion.
Citra.—Base of secondaries vermilion; inner margin vermilion.

ABDOMEN.

Aulea.—Dorsal surface solidly dark slate; ventral white, with sublateral and median gray bands.

Picta.—Dorsal surface: male carmine, with wide, median, gray band; female: each segment chiefly slate, carmine showing like stripes between the segments; ventral surface white, with three median and three sublateral small spots, all about equal; the lateral spots are large.

Maia.—Dorsal surface vermilion, with narrow median band in male; the female has a wider median band, minute lateral and small sublateral spots; the ventral aspect is white, with three confluent gray spots making a large triangular blotch.

Citra.—Dorsal surface is vermilion in the male; in the female it is vermilion with a narrow median band of gray, increasing in width as it extends posteriorly, and is widest on the hindmost segment; the lateral and sublateral spots are small, the median spots on the ventral side being larger, but disconnected.

EXPANSE.

Aulea: male, 45 mm.; female, 60 mm.
Picta: male, 40 mm.; female, 50 mm.
Maia: male, 45 mm.; female, 60 mm.
Citra: male, 50 mm.; female, 70 mm.

OBITUARY.

Dr. JUAN GUNDLACH, the well-known German naturalist, in Cuba passed away at the age of 85 years. Dr. Gundlach was a German, but had been 58 years in the island, which were unceasingly devoted to his studies of nature in mountains and swamps, up to seven years ago, when failing strength limited his activities. Some time ago he made a gift of a valuable collection of vegetable, animal and mineral specimens to the Institute. He had received an offer of $15,000 for this collection. The remains lay in state in Science Hall, and were buried this afternoon, March 16.

J. VON BERGENSTAMM, of Vienna, the entomologist, is dead.

ENTOMOLOGICAL NEWS for March, was mailed February 29, 1896.

HENRY FELDMAN.

ENTOMOLOGICAL NEWS
AND
PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,
ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. VII. MAY, 1896. No. 5.

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THE FELDMAN COLLECTING SOCIAL.

(See Plate V.)

An evidence of advancing interest in the study of insects is indicated in the fact that Philadelphia, which may well be called the home of American Entomology, sustains two entomological societies, namely, the American Entomological Society and the Feldman Collecting Social. The former society now works in conjunction with the Academy of Natural Sciences of Philadelphia, having rooms in the building of the Academy, and was organized in 1859. It is not the writer's intention, however, to deal with this society, other than by way of comparison, in order to show that the more recent organization is not intended to work inharmoniously with the older, but was formed to stimulate a social acquaintanceship among the collectors of Philadelphia without eliminating the advancement of their study. Sociality and the advancement of natural science were to be promoted hand in hand, neither to be sacrificed to the other.

While the members of the Feldman Collecting Social recognize fully the worth of the American Entomological Society, and are proud of its prestige in the entomological world, many of them being members of it, yet it long ago became apparent to the younger entomologists of Philadelphia that there was still room for another society having for its object the fostering of social features which they seemed to recognize would not be in keeping with the dignity of a society of world-wide reputation.

In December, 1887, a call was sent to the local workers, inviting them to be present at the residence of Mr. Henry W. Wenzel, 1115 Moore Street, on the evening of the 26th instant, to discuss plans of organization. The invitation met with a generous response, and a temporary organization was made, a committee consisting of Messrs. D. M. Castle, H. W. Wenzel and C. E. Seeber, being appointed to formulate a constitution, by-laws, etc., and to report at a meeting to be held on Jan. 10, 1888. At this meeting the committee's report was accepted, and a permanent organization effected and called the Feldman Collecting Social, the following persons constituting the original members: J. H. B. Bland, D. M. Castle, H. W. Wenzel, Edw. Wenzel, Frank Hoyer, Albert Hoyer, C. E. Seeber, Chas. Steiger, Philip Laurent and Chas. Liebeck. It was intended that the society should have a broad scope, its aims being restricted to no particular subject, but, on the contrary, the meetings were to be "free and open to the discussion of all branches of natural science." In late years, however, its scientific transactions have been almost entirely entomological, owing to the fact that all its present members are interested to a greater or lesser degree in that study. Active membership is restricted to fifteen, and there is at present but one vacancy. Three honorary members are on the roll.

Meetings are held on the second Tuesday of each month, excepting July and August, and the interest felt in the meeting by the members is evinced by a full attendance at almost every meeting. The verbal communications are as a rule, local in character, such as reports of captures and exhibition of specimens, but matters more technical and results of systematic work are not infrequently given. Much information is acquired by the members from the general discussion that invariably follows a communication, and adjournment is to "the annex," so-called because it is an after-attachment to the meeting. For the benefit of non-members, "the annex" means a collation.

The Feldman Collecting Social is so-called in honor of Henry Feldman, a one-time prominent Philadelphia collector, who worked contemporaneously with LeConte, Ridings, Newman and others whose names are familiar to the entomologists of to-day as belonging to men who, in spite of public prejudice and accompanying adversities, bravely adhered to their favorite pursuit, and who were really the pioneers of Entomology in America. Mr. Feldman was born in Celle, Hanover, Germany, in 1814, and came to the United States at an early age, where he carried on his entomological endeavors, and at the time of his death had accumulated a large collection of Coleoptera, which were his favorites. He died Nov. 12, 1887.—F.

NOTES ON EUROPEAN ENTOMOLOGICAL COLLECTIONS.

By PHILIP P. CALVERT.

(See the NEWS for January, 1896, p. 4.)

V.—BERLIN.

The entomological collections of the Royal Frederic William (Königliche Friedrich-Wilhelm) University in Berlin are contained in the Museum für Naturkunde, Invalidenstrasse 43, in the same extensive building with the Zoological and Paleontological collections and the Zoological Institute. The Director of the zoological collection is Prof. Karl Möbius. The entomological staff consists of Dr. Ferdinand Karsch (Orthoptera, Odonata, Hemiptera, Lepidoptera), H. J. Kolbe (Coleoptera, Neuroptera), Dr. H. Stadelmann (Myriapoda, Arachnida, Hymenoptera), Dr. B. Wandolleck (Diptera), Dr. R. Lucas (Hymenoptera), E. W. Rubsaamen (Cecidiæ), and E. Schmidt and M. Ude, preparators.

The collection of Insects forming a part of the "show" collections in Zoology and Paleontology, open freely to the public on three days in the week, is on the ground floor, and consists of a general systematic collection and one of German insects of all orders with the various developmental stages, preparations of insect anatomy, galls and their producers, specimens of insect architecture, two revolving cases for displaying metallic colors of Coleoptera and Lepidoptera, and, in some of the windows, photographic lantern slides of insect parts, and a series of denuded Lepidopterous wings to show venation.

The "study" collections occupy a room 34 x 16 metres (111.5 x 52.5 feet) on the third floor ("zweiter stock" of German nomenclature), having the full width of the southern wing of the building and well lighted by a row of windows on each of the two long sides, north and south respectively.

Dr. Karsch, to whom the writer is greatly indebted for the freest use of the collections during a six months' stay in Berlin, has kindly furnished the following data regarding their more important contents:

GENERAL.

The foundation of the collection was that of Graf Hoffmannsegg, purchased in 1818 for 22,000 thales, consisting of 18,504 species and 550,000 specimens.

Ehrenberg's collections from Abyssinia and Egypt.

Charpentier's collection, more especially Orthoptera.

The results of the Royal Prussian Expedition to Eastern Asia in 1860–62, obtained in the Dutch East Indies, China and Japan.

E. P. E. Friedrich Stein's collection of Palæarctic insects, particularly of Orthoptera, Neuroptera, Hemiptera and Hymenoptera.

Dr. Feodor Jagor's collections from the Philippines, Java and Singapore.

Dr. Theophilus Studer's collections made on the voyage of the "Gazella" in the Atlantic Ocean, Kerguelen Land, the west coast of Australia and Magellan's Straits.

Dr. Franz Hilgendorf's collections from Japan.

Dr. Peter's collections from East Africa.

Dr. Rosenhauer's biological collection of larvæ, pupæ and the objects serving the former as food, the insects mainly raised by Rosenhauer himself.

Types from all orders described by Klug, by Gerstaecker up to the time of his removal to Greifswald in 1877, and by Dr. Karsch.

North American species in all the orders are not numerous. Of late years the African collections have increased greatly in consequence of the activity of explorers in the German possessions.

COLEOPTERA.

Types described by Schaum, Erichson, Harold and others.

Haag Rutenberg's types, especially Tenebrionidæ.

LEPIDOPTERA.

Collections of Maassen, of Herman Davids (including many African types), of Stübel (especially from Colombia, studied by Maassen and Weymer).

Types of Plötz in Hesperidæ, of Staudinger, of Aurivillius and others.

The older collections of Lepidoptera were determined by Hopfer, first curator for Lepidoptera.

OTHER ORDERS.

H. Loew's collection, with the exception of the North American species.

Beren's European Hemiptera-Heteroptera.

Klug's Arachnida.

Types of Orthoptera described by Schaum.

A NEW AFRICAN SATURNIID.

By W. J. Holland, Ph.D., F. Z. S., etc.

I have just received a beautiful collection of African Lepidoptera collected by the late Dr. A. C. Good during the last months of his life in the interior of the Cameroons at Efulen, a mission station founded by him among the Bule tribe, about one hundred and twenty-five miles inland from the Great Batanga. While there are very few diurnal Lepidoptera which have not been hitherto described, there are a number of moths, some of them bred specimens, which are apparently new to science. One of them, reared as Dr. Good tells me from a chrysalis found by him, is a most remarkably beautiful insect, which I am unable to refer to any genus or species catalogued by Kirby or mentioned in the "Zoological Record" since that list was published. I believe it to be new to science, and I take pleasure in dedicating the genus, which I propose to found upon it, to my honored friend, Mr. Andrew Carnegie, whose recent gift of a million of dollars, the income therefrom to be annually expended in the purchase of works of art and collections for the Art Gallery and Museum, which he has founded in the city of Pittsburgh, well entitles him to be regarded as one of the foremost promoters of science in this country.

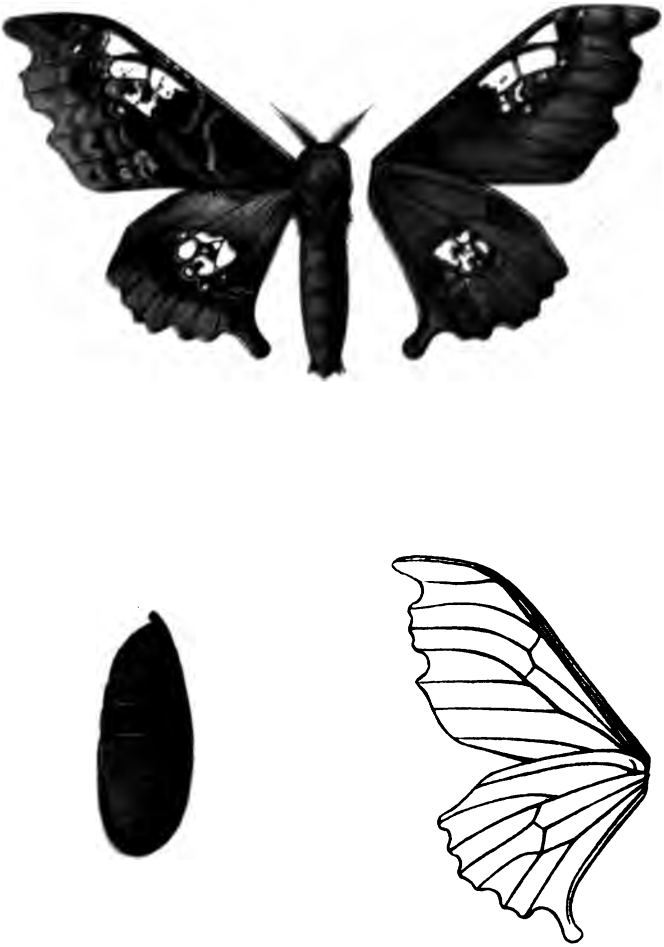
Family SATURNIIDÆ.

Genus **CARNEGIA.**

Somewhat allied to genus *Teratopteris* Hübner, and to *Holocera* Felder.

♀.—Body robust, anal extremity a trifle longer than the anal angle of the secondaries. Antennæ short, not longer than the width of the thorax, finely pectinated at the base, setose at the extremity. Legs short, tibiæ clothed with short, closely appressed hairs. The primaries have the costa straight for three-fourths of their length from the base, then abruptly rounding and continued to the outer angle by a straight line parallel to the line of the inner margin. The outer angle is strongly produced, giving the wing a strongly falcate appearance, which is increased by a deep excavation of the outer margin just below the outer angle. A similar deep excavation occurs on the outer margin between the extremities of veins 3 and 4. The inner margin is approximately straight, but projects downwardly over the secondaries by a broad tooth beyond the base. The secondaries have the costal margin curved to near the extremity of vein 8. The outer angle is slightly excavated; the outer margin is irregularly crenulate, deeply excavated between veins 3 and 4. At the anal angle there is a long, somewhat narrow tail-like projection directed inwardly. The inner margin is straight for the greater part of its length, curving inwardly rapidly as it approaches the anal angle. The cells in both wings are bisected by a fine nervule running from the discocellulars to the base. The wings are ornamented by a number of irregular, translucent, scaleless patches, distributed about the ends of the cell. Type *Carnegia mirabilis* Holland.

Carnegia mirabilis n. sp. (Plate VI) ♀.—Antennæ fulvous. Body above and below dark brown, slightly paler beneath. Legs concolorous, tarsi annulated with pale gray. The primaries are ornamented with eight or nine diaphanous spots located at the end of the cell on either side of the discocellulars, five of which are large, the others small. Of the large spots, one is subtriangular, lying just below the costa between the origins of veins 6 and 7. Below this, between veins 5 and 6, is a large oblong spot, separated by the discocellulars from an equally large spot located at the extremity of the cell. The inner outline of this introcellular spot is irregular. Below these two large spots are two unciform spots, with their small ends directed upwardly, one without the discocellulars between veins 4 and 5, the other within the cell. Between veins 3 and 4 near their



CARNEGIA MIRABILIS.

origin below the outer angle of the cell is a small round spot, and on either side of vein 5 near the lower outer angle of the large, oblong, quadrate spot are two similar round, small spots. Beyond the subtriangular spot near the costa is a small, round, translucent point. The base of the primaries is dark brown, the brown tract being defined externally by a twice curved paler violaceous line, beyond which there is a very irregularly dark violaceous band defined externally by a pale line exceedingly irregular in shape and closing in its upper portion a dark maroon-brown spot, which bounds the translucent spots at the end of the cell on their inner margin, and is continued downwardly across the middle of the wing to the inner marging, widening toward the inner margin. This dark fascia of rich brown is succeeded by two crenulate and irregular pale discal bands, separated by a darker brown line between them, the outer one accentuated by some dark brown patches between veins 1 and 3 and veins 4 and 6. The outer portion of the wing beyond these lines is pale wood-brown marked with some obscure submarginal acuminate brown cloudings. There is a subtriangular dark brown spot on the costal margin just before the apex. On the underside the primaries are plain, the transverse bands and lines and dark markings of the upper surface being obsolete for the most part; the secondaries have the costal region near the base pale brown, the outer margins laved with purplish brown, the middle area, especially toward the inner margin, dark maroon-brown, interrupted by the translucent spots clustered about the end of the cell. Of these spots there are ten, four of them large, the others small and circular. From this cluster of spots there runs inwardly to the inner margin a geminate pale greenish waved line. The underside of the secondaries is plainly colored like the primaries, being dark wood-brown with lighter reddish markings about the translucent spots, as is also the case to some extent on the primaries. Expanse 85 mm.

DURING a biological trip to the Dismal Swamp in October, 1895, I was impressed by the great numbers of Carabid beetles (*Carabus vinctus*) which swarmed everywhere in the vicinity of the shores of Lake Drummond. That which interested me most about them was a food habit I had not before noticed. All kinds of refuse animal matter, whether from fish, flesh or fowl, was attacked and greedily devoured by these voracious insects. As many as a dozen were seen feeding about an old fish head, or grouped around a bit of fresh skin or muscle. I soon found though that they were not an unmixed blessing, because small mammals left in the traps long after sunrise were certain to be more or less damaged. Some specimens were so badly mutilated that only the skulls could be saved. Never before have I seen them feeding on anything except insects which they had captured.—W. K. FISHER.

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., MAY, 1896.

THE collecting season is opening and nets, cyanide bottles and other apparatus are being prepared for action. Work on the cabinet is postponed until cooler weather and all our interest centres on the insect in the field. There are several things our field workers can do to advance the study of entomology and the opening of the season is a good time to begin. We refer to getting material in good condition and putting dates on paper or pin. Every collector should also have his pin labels containing his name and locality, and should never fail to have his or her specimens properly labeled. The time is coming when an insect will mean more than a name, as many biological studies of interest will be taken up in the near future, and an insect without date or locality will be considered worthless for every purpose other than as an individual of a species. Also remember it is just as easy for a student to study from a faultless specimen as it is from one that looks as though it had been struck by a cyclone.

NOTICE.—The Regents of the N. M. Agricultural College having arranged to dispense with my services after June 30th, correspondents are requested to send me no more insects to determine, as I shall not be able to attend to them.—T. D. A. COCKERELL, Agricultural College, Mesilla Park, N. M.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

Transplanting Insects.--The spread of the San José Scale has been alluded to in this department on several occasions, and also the methods of treatment recommended and other details concerning the species. At the last session of the New Jersey Legislature, in response to a request by the State Board of Agriculture, an appropriation of one thousand dollars was made for the purpose of introducing into the State of New Jersey, if possible, such predaceous insects as are proving useful in California to check the increase of this pernicious scale. In the effort to carry out this intent with the best chance of success, the writer will go to California during the early days of May, with the view of studying the habits of the predaceous insects which keep this species in check in that State. Sendings will be made to the East of all species found feeding upon the San José Scale, in all their different stages, to increase the chances of their safe arrival and of becoming used to their new surroundings. To add to the chances of success the coöperation of Prof. P. H. Rolfs, in Florida, and of Mr. L. O. Howard, Entomologist to the U. S. Department of Agriculture, has been secured. Prof. Rolfs has agreed to look after certain colonies of these insects in Florida, and will place them in the regions infested by the scale to the best advantage. Mr. Howard will receive other sendings and will place them in orchards in Virginia or Maryland as seems to him most desirable. In New Jersey there will be from eight to twelve orchards in which the insects will be received and liberated and where they can be watched to the best advantage. It is intended to obtain specimens from as many different localities in California as possible, and particularly to secure them from the most Northern localities at which they occur.

Whatever the outcome, this experiment will be a most interesting one. The climate of the Pacific coast differs so radically from that on the Atlantic that it would seem as if the experiment was foredoomed to failure, yet we can never tell what possibilities of adaptation an insect contains, and it is not at all impossible that some of the species will develop an ability to become completely dormant during the Winter and yet reappear in good condition and ready for work the following season. One of the great drawbacks to our eastern predaceous insects, is the slowness with which they breed. This puts them at a great disadvantage as against species like the San José Scale which has generation after generation during the entire season and where the number of young seemed to be practically unlimited. What is most needed is an insect that will become active early in May at the latest, if possible even during April, will then feed upon the hibernating scales, produce larvæ which become active before the middle of May, and full fed about the beginning of June. The San José Scale does not begin to reproduce in New Jersey until the first days of June, and if we could get a month of feeding on the hibernating adults by some predaceous species the check would be the most effective possible.

The Grain-feeding Palorus found in the United States.—*Palorus depressus* Fab.—My attention has been called by a paper by Dr. G. C. Champion in the "Entomologist's Monthly Magazine" for February (vol. xxxii, p. 26) to the fact that the *Palorus* occurring in this country and hitherto mentioned by the writer and others as *depressus* Fab. or *melinus* Hbst. resolves itself into two species, viz., *ratzeburgi* and *subdepressus*. The *melinus* of Fabricius, according to Champion, turns out to be a true *Hypophlœus*, therefore not, as stated in the Munich catalogue, synonymous with *depressus*. The latter I have not yet seen, and as it does not seem to be known as an indoor pest perhaps does not occur in America.

Palorus ratzeburgi Wissm.—This is the commonest species found in flour, meal and grain both in this country and abroad. It is of the same size and general appearance as *subdepressus*, but is distinct from that species by the structure of the head and particularly of the eyes. The latter are smaller and more finely granulated, the ventral portion being very much narrower; the sides of the front are only moderately elevated and do not extend backward so as to conceal any portion of the eye and the prothorax is noticeably broadened anteriorly.

I have seen specimens from Detroit, Mich., New York city, Lebanon, Ind., Kansas and Georgia, and have found it in abundance in flour, grain and refuse from bakeries and feed-stores in the District of Columbia.

Palorus subdepressus Woll.—This species lives in granaries in Europe, and is said to have occurred in a shipment of ground nuts at Rouen. It will doubtless in time be found to have similar habits in this country, but at the present writing, so far as I know, has been taken only under bark. Specimens in the National Museum are from Tallahassee, Fla., Texas and Fresno County, California. A single example was taken by Mr. Linell in a pharmacal laboratory at Brooklyn, N. Y., and Mr. Schwarz has a series taken years ago at Washington, but evidence is wanting to show that the species has yet gained a foothold so far north. It is the species observed by the writer at the Columbian Exposition in meal from Brazil.

In this species the sides of the front are strongly reflexed and extend backward concealing the anterior margin of the eye as seen from above and the prothorax is only slightly broader anteriorly.—F. H. CHITTENDEN.

Diabrotica vittata as a Greenhouse Pest.—The depredations of this pest, both adults and larvæ, on Cucurbs of the garden and truck farms is too well known to require explanation. I have known them to appear suddenly and in great numbers in early Spring and attack young cucumber plants growing under glass when this was removed from the plants during the day. Late in Autumn, after all vines have been killed by the frost, the adults congregate in considerable numbers about the unripe pumpkins and squashes eating holes in them, and I have also found them in October, in woods far from where their favorite food-plants had been cultivated, feeding on the belated flowers of a species of Aster. For myself I have never been able to account for the great numbers of these beetles that appear every season, as if they developed on the roots of Cucurbits alone it would be impossible to secure plants at all.

Dr. Henry Shimer, who first published the life-history of this insect in the "Prairie Farmer" of Aug. 12, 1865, stated that the insect wintered over the pupal stage, but Prof. Riley, in his "Second Missouri Report," p. 66, says that he observed both pupæ and adults Nov. 8, 1869, about vines that he had isolated early in October, and reasoned from this that the species hibernated both as pupæ and adults. This, so far as I am aware, completes our knowledge of the whereabouts and condition of this insect from October until April.

For some time I have been receiving complaints of a worm destroying cucumber plants, growing in greenhouses for the purpose of securing the vegetable for Winter use, but was unable to secure specimens until Dec. 28, 1895, when I visited the infested greenhouses located at Hyde Park, near Cincinnati, Ohio, and identified the depredator. The young cucumber plants were first started in small pots, and grown there until the third leaf began to appear, when they were transplanted in rows in the benches, the soil contained in these having been removed from the surface sod outside during the preceding August. At the time of my examination these young plants were being rapidly destroyed by larvæ varying in size from one-half, or a little less, to two-thirds grown. I took many of them in the very act of gnawing off the tender stems just below the surface of the soil, which caused the plants to fall over and suddenly wither and in one case found a larva that had made its way full length up an amputated stem. A very few adult beetles were observed in the act of feeding on the leaves. The roots of many plants that were large enough to fruit were grooved and scarred in a way to indicate that the *Diabrotica* larvæ had been at work on these also, the effect being to weaken them and prevent fruiting. Altogether the loss caused by these larvæ was very serious, and the owner of the greenhouses quite ready to give up in dispair.

It seems probable that the eggs from which the larvæ observed by me originated, were deposited in the greenhouses by females coming in from without, as in the greenhouse where I observed them destroying young plants, a crop of cucumbers had already been reared since the soil was brought in and this crop only suffered to a slight degree by scarring of the roots, thus indicating, but not by any means proving, that the larvæ came from eggs deposited late in the Fall by females that might have entered after all vines outside had been destroyed by the frost.

F. M. Webster.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

PICTURES for the album of the American Entomological Society have been received from B. L. Cunningham, Fort Klamath, Oregon; Philip P. Calvert.

Mr. Philip Laurent and Dr. D. M. Castle are spending a month in Florida on a collecting tour. We hope they may succeed in getting all they desire in the way of insects.

Mr. Lancaster Thomas and Mr. H. W. Wenzel contemplate a trip to Roan Mountain, Mitchell County, North Carolina. The former will collect Lepidoptera and the latter Coleoptera, especially looking out for *Cychrus*.

Mr. GRAF-KRUSI, of Gais, near St. Gall, Switzerland, has recently sent us a sample of his excellent butterfly net. This is a strong folding net, and is so arranged to fit any size stick. The whole net may be readily carried in the pocket and yet can be put into condition for use in a moment. The netting is made of bolting cloth and is exceedingly strong, and will not tear, and can be used for a long time. These nets are also extremely reasonable in price.

A SPECIMEN of *Hypolimnus misippus* Linn. was taken near Oceanus, Banana River, Florida, Dec. 1, 1895, and is now in my collection. I believe this butterfly has only once before been recorded from Florida.

MRS. CHAS. B. CORY.

Mr. GEO. W. PECKHAM, 646 Newstead St., Milwaukee, Wis., asks for information on several points:

1. Have you ever seen wasps sting their prey? Is the spider or insect stung in any particular spot, or wherever opportunity offers?

2. In opening nests have you ever noticed whether the insects or spiders stored up were all alive, or whether they were partly dead and in various stages of preservation?

3. Do you know of any solitary wasps that mutilate their prey before storing it? In opening mud-dauber nests I have frequently found some of the spiders all dried up; others dead, but plump; and others still alive.

A NEW USE FOR INSECTS.—Prof. Lester F. Ward recently received a request from Prof. Sargent, of Cambridge, for information as to the Winter appearance of *Salix wardi* Bebb, an interesting willow which occurs on the Potomac flats. He yesterday (March 22, 1896) visited the locality where this willow grows, but was unable, in the absence of leaves, to distinguish it from other willows. After some search he found a few specimens, the leaves of which had been webbed to the twigs by the larva of *Cerura cinerea* Walker. This enabled identification of the plant, and he secured specimen twigs which were forwarded to Prof. Sargent. Prof. Ward was greatly pleased with the result of his trip, and says that he has a new interest in the subject of entomology. The experience suggested to him that doubtless in many cases deciduous plants could be determined in the Winter time by one familiar with the remains of insects specifically affecting such plants, or with their work.—L. O. HOWARD.

THE PAINTED HICKORY BORER.—On March 8th beetles were brought to me by a lady who was mnch afraid that her dwelling might be infested with some terrible household pest. She stated that several beetles had been killed about the house, and even asserted that she had been bitten by one of them. The insects were specimens of the Painted Hickory Borer, *Cyllene pictus* Drury, and their presence in the house in Winter was regarded as a great mystery by the inmates. Upon inquiring if any hickory wood had been brought into the house an affirmative answer was given; and that the wood had lain for some time in a closet to dry. I explained that the larva was a borer of the hickory, that the adults had probably emerged from the wood, and that the insect was never serious as a household pest much to the relief of my friends. According to Packard* the adult usually emerges in June out of doors; and that this species attacks the black walnut and butternut as well as the hickory.—W. E. BRITTON, New Haven, Conn.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be limited to twenty-five for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the anatomy of insects, however, whether relating to American or exotic species will be recorded.

1. JAHRESHEFT DES NATURWISSENSCHAFTLICHEN VEREINS, TRENCSEN, 1894-95.—New African and Australian Orthoptera, C. Brancsik.

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* Fifth Report U. S. Entomological Commission on Forest Insects, p. 287.

2. TERMESZETRAJZI FUZETEK, xix, 1.—New magnificent species of Hymenoptera in the collection of the Hungarian National Museum, A. Mocsary. Monograph of the bee genus *Ceratina* (Latr.) (Palæarctic species), H. Friese.

3. ZOOLOGISCHER ANZEIGER, No. 497.—Geophilidæ and Scolopendridæ from Portugal, and table of the European species of *Geophilus*, C. Verhoeff.

4. ZEITSCHRIFT FUR WISSENSCHAFTLICHE ZOOLOGIE, lxi, 2.—On the post-embryonal development of the efferent ducts and the auxiliary glands of the male sexual apparatus of *Bombyx mori*, E. Verson and E. Bisson.

5. PROCEEDINGS OF THE AMERICAN PHILOSOPHICAL SOCIETY, No. 149.—On *Apatela*, A. R. Grote. The Hypenoid moths and allied groups, ibid.

6. BIOLOGIA CENTRALI-AMERICANA, Zoology, Pt. 126.—Chilopoda, pp. 1-24, pls. 1, 2, R. I. Pocock. Coleoptera, vol. iii, pt. 1, pp. 401-440, pls. 18, 19 (Elateridæ), G. C. Champion. Coleoptera, vol. iv, pt. 6, pp. 81-96 (Scolytidæ), W. F. H. Blandford. Rhynchota Homoptera, vol. ii, pp. 121-128, pl. 8 (*Polyglypta*, etc.), W. W. Fowler. Diptera, vol. ii, pp. 265-272 (Sarcophaginæ), F. M. v. d. Wulp.——Ibid. pt. 127.—Chilopoda, pp. 25-40, pl. 3, R. I. Pocock. Coleoptera, vol. iii, pt. 1, pp. 441-472, pl. 20, G. C. Champion. Coleoptera, vol. iv, pt. 6, pp. 97-112, pl. 4, W. F. H. Blandford. Rhyncota Homoptera, vol. ii, pp. 129-136, W. W. Fowler. Diptera, vol. ii, pp. 273-280, pl. 7, F. M. v. d. Wulp.

7. PROCEEDINGS OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, 1896, i [Extract].—The bees of the genus *Perdita* F. Smith, T. D. A. Cockerell.

8. ENTOMOLOGISCHE NACHRICHTEN, 1895, H. 22.—Aethiopische Heterocera, i, F. Karsch.

9. FLORIDA AGRICULTURAL EXPERIMENT STATION, Bulletin 34.—Insect enemies of truck and garden crops, A. L. Quaintance.

10. ANNALS AND MAGAZINE OF NATURAL HISTORY, March, 1896.—Notes on the anatomy of some scorpions, and its bearing on the classification of the order, M. Laurie. Descriptions of five new species of *Castnia* from tropical South America, H. Druce.

11. RECORDS OF THE AUSTRALIAN MUSEUM, ii, 7.—*Stephanocircus* Sk.: a rejoinder, F. Skuse.

12. BOLLETTINO DEI MUSEI DI ZOOLOGIA ED ANATOMIA COMPARATA DELLA R. UNIVERSITA DI TORINO, x, No. 210.—Voyage of Doctor Alfredo Borelli to the Argentine Republic and Paraguay, Opiliones Laniatores, W. Sorensen.——Ibid. No. 219.—Voyage of Doctor Alfredo Borelli to the Argentine Republic and Paraguay, Hemiptera-Heteroptera, A. L.

Montandon.——Ibid. No. 220.—New species of Dytiscidæ collected in Darien by Dr. E. Festa, A. Griffini.——Ibid. No. 224.—A new genus of Tabanidæ collected in Darien by Dr. E. Festa, E. Giglio-Tos.

13. LA NATURALEZA. PERIODICO CIENTIFICO DE LA SOCIEDAD MEXICANA DE HISTORIA NATURAL (2), ii, 8.—New Mexican species of *Trombidium*, A. Duges.

14. CICADINEN (Hemiptera-Homoptera) VON MITTEL-EUROPA von Dr. L. Melichar. 8vo., Berlin, Felix L. Dames, 1896. Price 20 Marks.—This is a volume of 364 pages and 12 well-executed plates. The external anatomy and biology are discussed and directions for collecting and preserving given, as well as the literature and a historical review of the subject. Geographically, the work includes Austro-Hungary, the German Empire and Switzerland. Fieber's division of the Homoptera into eight families is accepted by the author, and the most of those families erected by J. Edwards stand as subfamilies only. Each genus and species is fully described and figured in detail, and keys to the genera and species are not wanting. The synonymy is apparently also very complete. The work is important to Hemipterology, and students of Homoptera will no doubt find it indispensible.—F.

15. U. S. DEPARTMENT OF AGRICULTURE, DIVISION OF ENTOMOLOGY, Technical Series, No. 2.—The grass and grain joint-worm flies and their allies: a consideration of some North American Phytophagic Eurytominæ, L. O. Howard.——Ibid. No. 3.—The San José Scale, . . . L. O. Howard and C. L. Marlatt.——Circular No. 14.—The Mexican cotton-ball weevil, L. O. Howard. Ibid.—General work against insects which defoliate shade trees in cities and towns, L. O. Howard.

16. Twenty-sixth Annual Report of the Entomological Society of Ontario, 1895.—Insects injurious of the year 1895, J. Fletcher. The growth of the wings of a Luna moth, J. A. Moffat. Observations on the season of 1895, ibid. Variation, with special reference to insects, ibid. Some Winter insects from swamp moss, W. H. Harrington. Birds as protectors of orchards, E. H. Forbush. The Rocky Mountain locust and its allies in Canada, S. H. Scudder. Seventh Annual Meeting of the Association of Economic Entomologist (these papers were previously noted in these columns).

17. HATCH EXPERIMENT STATION OF THE MASSACHUSETTS AGRICULTURAL COLLEGE, Bulletin No. 36.—The imported elm-leaf beetle; Maple Pseudococcus; Abbot Sphinx; San José Scale, R. A. Cooley.

18. THE ENTOMOLOGIST, April, 1896.—*Periplaneta australasiæ* and *P. americana* (illustrations), W. J. Lucas. Meteorological and other conditions influencing the appearance of moths, E. N. [illegible]. New experiments on the seasonal dimorphism of Lepidoptera, A. Weismann (translated from the German by W. E. Nicholson). *Irrorholides* a new genus of Ateuchidæ, . . . J. W. Shipp. Collecting in New England, W. F. Fiske.

19. JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY, March, 1896.—The life-histories of the New York slug-caterpillars, ii, H. G. Dyar and E. L. Morton. Synopsis of the species of *Nysson* inhabiting America, North of Mexico, W. J. Fox. Some notes on locust stridulation, A. P. Morse. Both sides of butterflies, ibid. A new *Gloveria*, H. G. Dyar. Literature on defensive or repugnatorial glands of insects, A. S. Packard. Preliminary handbook of the Coleoptera of Northeastern North America, H. F. Wickham.

20. DELAWARE COLLEGE AGRICULTURAL EXPERIMENT STATION, Bulletin No. 30.—The San José scale, M. H. Beckwith. Present status of the San José scale in Delaware, ibid. Status of the San José scale in the United States, ibid.

21. ILLUSTRIERTE WOCHENSCHRIFT FUR ENTOMOLOGIE, Jhg. 1, No. 1.—A new classification of the Muscidæ based on the bristles of the thorax and the segmentation of the abdomen, E. Girschna-Torgau.

22. PSYCHE, a journal of entomology, April, 1896.—The New England Melanopli, S. H. Scudder. On Coleoptera found with ants (third paper), H. F. Wickham. New Homoptera received from the New Mexico Agricultural Experiment Station, ii (cont.), C. F. Baker. New species of *Prosapis*, T. D. A. Cockerell.

23. Report of the Entomological Department of the New Jersey Agricultural College Experiment Station for 1895, by John B. Smith (contains numerous articles relating principally to economic entomology).

24. THE AMERICAN NATURALIST, April, 1896.—The segmental sclerites of *Spirobolus*, O. F. Cook.

25. LE NATURALISTE CANADIEN, March, 1896.—Lepidoptera of Sherbrooke and vicinity (cont.), L'Abbé P. A. Begin.

26. THE CANADIAN ENTOMOLOGIST, April, 1896.—A contribution to the knowledge of North American Syrphidæ, W. D. Hunter. *Pieris rapæ* and *Agraulis vanillæ*, W. G. Wright. On the position of the genus *Demas*, H. G. Dyar. Some *Argynnids* of Park City, Utah, A. J. Snyder. Luna eggs—a correction, W. H. Harrington. A Canadian *Trigonalys*, ibid. *Ithycerus novaboracensis* Forst., ibid. *Aidos* Hübner = *Brachycodion* Dyar, H. G. Dyar (no title). Notes on New Mexico and Arizona Hymenoptera, C. H. T. Townsend.

27. NOVA ACTA ACADEMIAE Cæsareae Leopoldino-Carolinae Germanicae Naturae Curiosorum (Verhandlungen der Kaiserlichen Leopoldinischen Carolinischen Deutschen Akademie der Naturforscher), Halle, 62er Bd.—Revision of the genus *Chilosia* Meigen, Th. Becker. Ibid., 64er Bd.—Systematic revision of the Geometridæ of the northern temperate zone, Part 7, C. v. Gumppenberg.

28. REISEN IM ARCHIPEL DER PHILIPPINEN von Dr. C. Semper, 2er Theil, vi, Bd., 1 L.—Moths, G. Semper.

29. LEPIDOPTERA INDICA, F. Moore, pt. 24.—This part concludes volume ii, and includes part of the group Charaxina of the Nymphalinæ. Plates 181–190.

30. PROCEEDINGS OF THE CALIFORNIA ACADEMY OF SCIENCES (2), v, pt. 2.—Mexican Formicidæ, T. Pergande.

31. TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON, 1896, pt. 1.—On the heteromerous Coleoptera of St. Vincent, Grenada, and the Grenadines, G. C. Champion. New and little-known Palæarctic Perlidæ, K. J. Morton. On the relation of mimetic patterns to the original form, F. A. Dixey. The rhynchophorous Coleoptera of Japan, pt. iv, D. Sharp. Notes on flower-haunting Diptera, G. F. Scott-Elliot.

32. NOVITATES ZOOLOGICÆ, iii, No. 1.—Lampyridæ captured in Paraguay by Dr. Bohls, E. Olivier. Notes on Heterocera, with descriptions of new genera and species, W. Rothschild and K. Jordan.

33. British Moths. By J. W. Tutt, F. E. S. George Routlege & Sons, publishers, London and New York. This is an elementary treatise on the moths of Great Britain and contains 508 pages, 12 colored plates and numerous wood cuts. This is a book appealing to the beginner, and presents the subject up to date. The colored figures are crude, but answer the purpose. Most of our entomological works are too expensive and prohibitive thereby to the young naturalist. The author says in the preface: "In spite of the large number of books relating to British moths that have been published in recent years, it yet remains a serious but undoubted fact that there are only two completed books in which even the species are correctly named. It is with the intention of pointing out to young collectors and students the present condition of entomological science that these pages have been penned. The lines of classification adopted are those of the most recent authorities on the subject, and are based on evolutionary lines." We have no such work as this on American moths, and while it does not treat of American species, yet it would be useful in every other way to the student on this side of the water.

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Doings of Societies.

PHILADELPHIA, April 14, 1896.

A stated meeting of the Feldman Collecting Social was held at the residence of Mr. H. W. Wenzel, 1509 S. 13th Street. Members present: Messrs. Bland, H. W. Wenzel, Johnson, Trescher, Boerner, Seiss, Fox, Schmitz, E. Wenzel, Griffith and Haimbach. Honorary members: Drs. Geo. H. Horn, Henry Skinner and John B. Smith. Visitors: Mr. Lancaster Thomas, Dr. W. E. Hughes, Prof. Frederick Prime and Edwin Bischoff, of Newark, N. J. Meeting called to order at 9 P. M., President Bland presiding. Written communications were received from Dr. D. M. Castle from Savannah, Ga., and from Mr. Philip Laurent from Wildin, N. C.; these two members being on a collecting trip through the South, Gulf Hammock, Fla., being the terminus.

Dr. Hughes spoke to the members in reference to dust proof cabinets, recommending them to those who needed new ones; the ones referred to are made of sheet-iron, the grooves for the drawers being so arranged as to make them interchangeable and put together so as to make them absolutely dust proof and air tight. The doctor considered it an ideal case for the preservation of specimens, it having been found so, especially for ornithological specimens.

Dr. Horn spoke of his progress in the study of Oedermeridæ, stating that there was no longer a doubt but that the two species at present called *Calopus* must be separated, *angustus* belonging to the genus as typified by *serraticornis* of Europe. The other species, *aspersus*, may be placed in *Sparidrus*, there being no discoverable characters to separate it as they are now published.

Dr. Skinner read a paper on the variation in the Lepidoptera.

Prof. Prime, who occupies the chair of Natural History at Girard College, addressed the members to find if any of them would be willing to furnish him with a few specimens of different orders, it being his object to obtain a collection for the purpose of interesting and teaching the boys at the College in Entomology,

Mr. Fox presented a box of cocoons of *Oiketicus townsendi* which he had received from Mr. Cockerell for distribution among the members who desired them; those who accepted the cocoons desired Mr. Fox to thank Mr. Cockerell for his donation.

Mr. Johnson spoke of those Diptera that have their eyes pedunculate, including the genera *Diopsis*, *Sphyracephala*, *Plagiocephala* and *Achias*. The different forms and position of the antennæ were referred to also their distribution.

Specimens of *Sphyracephala brevicornis* Say from Natrona, Pa., and *Diopsis* sp. from eastern Africa were shown.

Prof. Smith moved that a committee be appointed to communicate with the committees from other societies to arrange the minor details for the 4th of July field meeting at Newark. The president appointed the following committee of three: Dr. Griffith, Mr. Fox and Mr. Johnson.

Dr. Dixon president of the Academy of Natural Sciences, of Philadelphia, sent word to the members of the Social, asking if they would be willing to provide a local collection for the use of the Academy, he agreeing to furnish all the boxes needed for this purpose. The members readily accepted this proposition, and were advised to collect all orders and to mark the dates and localities on all such specimens plainly.

Prof. Smith presented each of the members with a copy of his annual report.

No further business being presented the meeting adjourned to the annex at 11 P. M.

THEO. H. SCHMITZ, *Secretary.*

The Entomological Section

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF MEETINGS.

MARCH 26, 1896.

A regular stated meeting of the Entomological Section of the Academy of Natural Sciences was held in the Hall, S. W. cor. Nineteenth and Race Streets, this evening, Dr. Geo. H. Horn, director, presiding. Dr. Horn stated that he had recently received a letter from Mr. Champion in relation to the synonymy of some Elateridæ found in our fauna and in Mexico, more particularly in regard to the prosternum of *Ludius*. The speaker stated that a Lower Californian form had a differently shaped prosternum from that found in the other members of the genus, and that the mesosternum was more protuberant. This will probably be referred to *Probothrium* notwithstanding the fact that *texanus* and the other form are almost exactly alike otherwise. Mr. Welles exhibited specimens of the peculiar larva of *Harrisimemna trisignata* as well as the pupa, perfect insects and lilac branches showing borings in the wood. The larvæ, when full grown, bore into the solid wood to change into a chrysalis. Mr. C. Few Seiss read a paper on "The Breeding Habits of *Periplaneta orientalis*." On the 20th of April, 1895, one male and three female cockroaches, *Periplaneta orientalis* Linn., were caught and placed in a large shallow jar, in the bottom of which was a layer of garden soil about one inch in thickness. A small box with an aperature or doorway at one end was also provided, which was regularly used by the roaches as a home, dormitory and place of retreat. Throughout their captive lives they were regularly fed on bits of bread, cheese, crackers, sugar, table scraps, and also supplied with water. On the 31st of July one female died and was found partly devoured; the male died August 15th; the second female August 25th; and the third and last female died September 6th, soon after dropping an egg capsule. The three females during their lives in the jar deposited twenty-five egg-cases (oothecæ); or about eight for each female. As one egg-case contains just sixteen eggs, eight in a row on each side, twenty-five would represent a new generation of four hundred cockroaches in one season of about four and a half months. The first egg-case hatched Nov. 9, 1895, and the second a few days later, but whether these were the first two dropped, viz., May 5th and May 14th I am not positive, but suppose they were. Prof. C. V. Riley says ("The Standard Nat. Hist." vol. ii, p. 171): "The female cockroach carries the egg-case about with her until the young are ready to emerge, when it is dropped." This you will notice does not coincide with my observations. The length of time in which the female carries her egg-case, from the first appearance of the bulb to the moment of dropping, I have never observed to be over five days, and generally only four, but Edw. A. Butler says ("Our Household Insects," London, 1893): "When full, the case protrudes from the end of the abdomen of the female, and is carried about by her in this position for about a week, after which it is dropped into a suitable crevice in a warm situation." On three different occasions I saw the females scoop out a shallow cavity in the loam, using the head and legs in digging; in this the egg-case was deposited and carefully covered up with loose earth, In most instances, however, the egg-cases were dropped promiscuously, with no attempt at concealment. The development of the ootheca or egg-capsule is interesting. It first appears at the tip of the abdomen as a soft hemispherical bulb, of a creamy white color, in marked contrast to the deep brown color of the body. On the second day it becomes oblong and somewhat compressed, and changes to a dull yellow or clay color. It subsequently assumes a dark brown tint, scarcely differing from that of the color of the parent. The sixteen little *Periplanetas* that emerged from the eggs on the 9th of November were delicate in form, semi-transparent, and of a pale amber color. Their eyes were their most conspicuous features, being comparatively very large, and of deep brown color. As the mothers of these young *Periplanetas* were dead long before they came into the world, it is not probable that the offspring ever receive maternal care or protection.

Mr. Lancaster Thomas exhibited a net frame made of a continuous piece of aluminum wire. The coiled ends of the wire so twisted as to form a threaded arrangement into which a handle might be screwed. It was very inexpensive, costing only fifteen cents. He further stated that he believed a round net frame preferable to one made from material like a clock-spring, as the latter had a tendency to cut off leaves and twigs and thus fill the bottom of the net with débris. Mr. Westcott showed a substitute for cork to be used in boxes or drawers. It is what is known as linoleum, and he believed it to be preferable to cork. Mr. Wenzel suggested that if it would corrode the ends of the pins it would interfere with its usefulness. Dr. Skinner called attention to a material known as *Polyporus betulinus*, a fungus, which could also be used for the same purposes as cork as far as entomology is concerned. Mr. Fox stated that he had been studying the Hymenoptera caught in Northeast Africa by Dr. A. D. Smith, and presented by him to the Academy. There were about ninety species, of which perhaps a half dozen were new to science.

Dr. HENRY SKINNER, *Recorder*.

The following papers were read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS:

PRELIMINARY NOTES ON FIVE NEW SPECIES OF SCALE INSECTS.

By W. G. JOHNSON, University of Illinois, Champaign.

The Elm Chionaspis (*Chionaspis americana*).—This species is very abundant throughout Illinois on white elm (*Ulmus americana*), and as I believe it is a native American insect, I have so named it. It has been very abundant and destructive to shade trees in our cities throughout the State the present season, and is also very common on native timber in central and southern Illinois. The scale of the female is larger and more convex than that of the scurfy bark-louse, *Chionaspis furfurus*, is yellowish brown at first, but becomes lighter with age and exposure; those that remain over Winter shielding the purplish eggs become nearly white by Spring. The male scale is pure white and does not differ from those characteristic of the genus. There are two broods in this latitude. The young of the first brood begin to appear about the last of April or the first of May, and the second in July. The adult males are peculiar, in the fact there is a winged and a wingless form. The wings in the former are well developed, while in the latter they are represented by mere stubs. The attack is confined usually to the trunk and branches, but the males often cluster on the underside of the leaves. This is a very important pest, from the economic point of view, and is mentioned here in order that entomologists may be on the lookout for it.

The Cherry Aspidiotus (*Aspidiotus forbesi*).—This species is by far the most destructive scale I have yet found in Illinois, and unless its spread is checked I believe it will rival the dreaded San José scale, *Aspidiotus perniciosus* Comstock, in its destruction of fruit trees. It has killed many cherry trees in this State the present season. I have seen this species colonated as thickly on nine-year old trees in this State as ever I saw the San José scale on trees in the Santa Clara Valley, California. I have found it also on currant, apple, plum, peach, pear and honey locust. Cherry, however, seems to be its favorite, and I have therefore proposed the above-mentioned popular name. I have also found it very abundant on native wild cherry in central and southern Illinois, and I am of the opinion that this was its original food-plant. It confines its attack principally to the trunk and larger branches, but is often found on the leaves and fruit. It is pretty generally distributed over this and adjoining States. It approaches *Aspidiotus ancylus* Putnam, but differs from that species in size, color and number of lobes and spinnerets of the last segment of the female. The half matured female hybernates; I believe the species is both oviparous and viviparous, as I have found eggs under scales, and have observed fully developed embryos within the body of the females. The specific name proposed for this insect is in honor of Prof. S. A. Forbes, State Entomologist of Illinois.

The Maple Leaf Aspidiotus (*Aspidiotus comstocki*).—This insect has been very abundant on sugar maple (*Acer saccarhinum*) on Mt. Carmel, Ill., the present year. It attacks the leaves, living in great numbers on the underside, causing yellowish spots on the upper surface. The spots become more conspicuous as the insects mature, and the leaves fall prematurely. The species is related to *Aspidiotus uvæ*, but is easily distinguished from that insect by its yellowish gray or whitish scale and concolorous exuviæ. The half mature females hybernate under the leaf buds. I have not found this insect on any other tree than maple, and as it attacks the leaves, principally, I have proposed the above popular name. Its specific name is proposed in honor of Prof. J. H. Comstock, of Cornell University, who first instructed me in this most interesting group of insects.

The Elm Aspidiotus (*Aspidiotus ulmi*).—This species has been found on the trunk of white elm (*Ulmus americana*) on the University campus, in rather limited numbers. So far as my observations go it does not attack the branches, twigs or leaves. This scale is not so important, economically, as the preceding species.

The Buckeye Aspidiotus (*Aspidiotus æsculi*).—I found this species very abundant on buckeye (*Aesculus californica*) in Santa Clara County, California, two years ago. It attacks the trunk, branches and smaller twigs, but so far as I have observed the scale, I have never seen it on the leaves. It is a very prolific creature, and often colonates to such an extent as to completely cover the branches. The color of the scale conforms to that of the bark, and where not abundant is difficult to detect.

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TWO DOLICHOPODID GENERA NEW TO AMERICA.

By William Morton Wheeler, Ph.D.

(University of Chicago.)

While looking through a lot of Dolichopodidæ collected during the Summer of 1895, I happened on two species which represent genera that have long been known to occur in Europe, but whose presence in America has not been noted.

Of the first genus, *Xiphandrium*, Loew (Monog. ii, p. 142) believed that he had seen a single female specimen from North America, but it had lost its antennæ, so that he could not be certain of its systematic position. My specimens agree in most respects with the generic characters given by Loew, although the sudden constriction of the long third antennal joint near its base and the long beard of cilia on the inferior orbit might lead one to make it the type of a new genus. I have refrained from this, however, because the limits of the genera *Porphyrops*, *Rhaphium* and *Xiphandrium* are by no means perfectly definite (Conf. Schiner Fauna Austriaca Diptera i, p. 194) and the founding of a new genus could only add to the confusion. A careful study of the structure of the hypopygium in these genera may give more satisfactory characters, but the small size of the species and the difficulty of obtaining sufficient material will, I fear, delay such a study for some time. Adopting Schiner's definition of the genera *Rhaphium* and *Porphyrops*—he abandons Loew's genus *Xiphandrium*—I am in doubt where to place the American species; I prefer, therefore, to accept Loew's view and to recognize his genus as distinct from the other two.

The second species may be placed without difficulty in Wahlberg's genus *Thinophilus* as defined by Loew (Monog. ii, p. 148–149) and Schiner. According to Loew the male *Thinophilus* has *six*, the female *five* abdominal segments, whereas Schiner says that the abdomen is "in beiden Geschlechtern fimfringlig." The latter author also claims that the first and second abdominal segments are of equal length. Neither of Schiner's characters will apply to the American species, and here, too, I suspect that Loew is the more accurate.

The American *Thinophilus* is remarkable in two respects. First, its occurrence in the Western States and its absence in the Atlantic States—for I can hardly believe that so large and conspicuous a Dolichopodid could have been overlooked in the latter region—is another example of the similarity of the fauna of the Western States to that of Europe. Baron Osten Sacken long ago called attention to this interesting resemblance in the distribution of several insects (see his Western Diptera, p. 351 *et seq.*). A second peculiarity of the American *Thinophilus* is its occurrence in Wyoming, far from the sea-shore or any body of salt water. The European species (*T. flavipes* Zettst., *ruficornis* Haliday and *versutus* Walk.) are described as occurring along the sea-shore. Concerning this interesting difference in the American form, two suggestions may be made: either the species has become adapted to living along the shores of alkali streams and ponds, or it may be actually a salt water species which has its center of distribution in the vicinity of the Great Salt Lake. These are matters for further investigation.

I append descriptions of the two new species:

Xiphandrium americanum n. sp.

Male.—Length 2.5 mm.; length wings 2.25 mm. Slender species; proboscis small, black; palpi rather large, yellow, with several stout black hairs. Face metallic green, with golden reflection, covered with an almost imperceptible layer of white dust. Antennæ black, nearly as long as the head and thorax; first joint slender, without hairs; second joint rounded, transverse, with a few stout black hairs; third joint about two-thirds the breadth of the head, broad at the base, but suddenly narrowing to a long, thin and very gradually tapering apical portion; the whole joint covered with long and distinct gray hairs; the thick and distinctly pubescent arista bent at an angle with the third joint and about one-third its length. Front rather bright metallic green; inferior orbit with a long and conspicuous beard of white cilia. Thorax and scutellum bright metallic green with golden reflection; in some specimens considerably dimmed by a layer of whitish dust; pleuræ metallic green with a layer of light-colored dust; scutellum naked, with only the usual bristles. Abdomen bright metallic green with golden reflection, somewhat darker towards the posterior end; covered with short black hairs; base of the small embedded hypopygium black, the tips of the appendages yellowish or piceous; posterior pair of appendages short and conical, directed at right angles to the long axis of the abdomen, with long and conspicuous hairs; anterior pair of appendages considerably larger, spatulate, less hairy and directed forwards; coxæ black, with whitish dust; fore coxæ with yellow tips and glistening white hairs on their anterior surfaces. Legs plain, covered with short, but distinct black hairs; fore and middle pairs yellow; fore femora with a conspicuous black streak along their outer faces; hind femora black with a metallic greenish tinge, covered with whitish dust and with yellow tips; all the tarsi infuscated from the tips of the first joint. Wings hyaline, distinctly narrower towards their bases; posterior cross-vein distant about one and one-half times its own length from the posterior margin, forming a right angle with the third longitudinal vein; apical segment of the fourth vein perfectly parallel with the third and terminating in the tip of the wing; tegulæ white, with pale cilia; halteres lemon-yellow.

Female.—Length 2 mm.; length of wings 2 mm. Face considerably broader and less brilliantly metallic than in the male, with a thicker layer of pale dust; first and second antennal joints like those of the male; third joint hardly longer than broad, with the same kind of glistening gray hairs as in the male; the apically inserted arista strongly pubescent, much longer than that of the male, being nearly two-thirds the breadth of the head in length and exhibiting the same S-shaped curvature as the elongated third joint of the male antenna. The white beard of cilia on the inferior orbit nearly as conspicuous as in the male; the black stripe on the fore femora less distinct; all the tarsi black from the tip of the first joint. Wing not narrowed at the base; anal angle prominent; posterior cross-vein somewhat further removed from the margin than in the male.

Described from seven males and one female taken in sweepings in the following localities: Milwaukee, Wis., June 26; Chicago, Ill., June 6; Whiting, Ind., July 13.

Thinophilus pectinifer n. sp.

Male.—Length 5.5 mm.; length of wing 5 mm. Proboscis greatly swollen, dark colored, covered with a thick layer of gray dust; palpi very large, flat, of a clear yellow color, with a very delicate layer of silvery dust, and with several prominent black hairs scattered over their surfaces. Face short and broad, its lower border far above the lower edge of the eyes; widening somewhat below; with two transverse wrinkle-like swellings, one near its middle, the other near its lower border; ground color greenish coppery, covered thickly with tawny dust; antennæ small, yellow, the broadly rounded end of the third joint somewhat brownish; arista black; eyes with the white pubescence particularly distinct on their lower portions; cilia of the inferior orbit long and rather dense, yellowish white; front and thorax greenish coppery, covered with a thick layer of rich tawny dust; the thorax with two opaque gray lines down its middle; pleuræ covered with a dense layer of tawny dust; scutellum coppery, somewhat brighter than the thorax. Abdomen with six apparent segments; the first distinctly shorter than the second; the second to sixth subequal; all the segments metallic green with coppery reflection and gray dust, thickest on the sides; whole upper surfaces of abdomen beset rather uniformly with short black hairs; hypopygium black, its embedded base covered with whitish dust; lamellæ directed forward, of uniform thickness, shining black, without dust and with a few weak hairs at their anterior ends; fore coxæ yellow, scarcely infuscated at their extreme bases, with some prominent black hairs on their anterior faces; middle and hind coxæ dark, with white dust and yellow tips. Legs yellow, with black hairs; the short tarsal joints individually blackened at their distal ends; fore tibiæ with an uninterrupted series of black spines along the whole inner face, three prominent black spines at their distal ends and three smaller and equidistant bristles on the middle of their outer faces; first joint of the fore tarsi with a plantar concavity near its proximal end, where there is also a dense cluster of short black spines; extending from the concavity to the distal end of the joint is an uninterrupted series of short stout spines, which gradually increase in length; these spines are inserted at right angles to the long axis of the joint like the teeth of a comb; middle and hind tarsi plain, the latter with the basal joint only one and one-third times as long as the succeeding joint. Wings of uniform [illegible] and with prominent anal angle; distinctly yellow along the costal segment, more grayish towards the apex and posterior margin; veins near the costa yellow, elsewhere brown. The posterior crossvein, which is twice its length from the posterior margin is covered with a faint gray or brownish cloud, and there is a distinct spot of the same color on the middle of the apical segment of the fourth vein; this vein having a very faint curvature, its tip running parallel with the termination of the third vein; tegulæ white, with glistening white cilia; halteres honey-yellow.

Female.—Length 4-5.5 mm.; length of wings 4.5-5.5 mm. The face is somewhat broader than that of the male; the abdomen, which has only five apparent segments, is broader and flatter. The fore tarsi are plain, the concavity of the first joint, the cluster and series of spines on the plantar surface are much less conspicuous than in the male. The same is true of the three black spines or spurs, at the distal end of the fore tibia.

For the two male and three female specimens from which this description is drawn, I am indebted to Mr. W. A. Snow, who collected them on Old Woman Creek, Wyoming (twelve miles north of Lusk) in July. The five specimens show a considerable variation in the color of the wings and body, some of them being much more yellow than others. There can be no doubt, however, that they all belong to the same species.

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NOTES ON OXYBELUS.—II.

By CARL F. BAKER, Fort Collins, Colo.

The species mentioned in this paper possess squamæ having lateral curved points. In all previously known species belonging to this group the spine is emarginate at tip. Three of the new species described herein (*robertsonii*, *varicoloratus* and *hirsutus*) form a new group of this section, having the spine entire at the tip. The new species are all Rocky Mountain forms, taken very near or within the hills. Several of them, like Prof. Cockerell's *cladothricis*, have a much greater extent of rufous on the abdomen than has so far occurred among eastern species.

Oxybelus robertsonii n. sp. ♂.—Vertex and thorax finely, somewhat sparsely punctate, the occiput finely transversely striato-punctate. Prothorax transversely carinate, not sharp angled at sides; mesonotum in front, and scutellum and postscutellum medially carinate; squamæ nearly joining behind, with very large, strong, lateral points but little bent, their tips somewhat exceeding tips of squamæ; spine rather long, narrow at base, towards the truncate tip flat and broadened to twice its width at base, sides of apical third parallel; metathorax with median space long triangular, passing into a short median carina, within transversely striate; above and lateral faces finely transversely rugose; pleuræ transversely striate. Abdomen oval, finely, somewhat sparsely punctate, scarcely constricted between the segments; last two segments coarsely punctate, the apical trapezoidal, truncate at tip; without lateral spines. Color black; pubescence silky, very thick on face, finer and thinner on rest of body;

mandibles piceous for a short distance at middle. Antennæ black, shading into light chocolate towards tips; tegulæ piceous; squamæ at base and spine at tip very pale yellowish; narrow apical margins of abdominal segments 1–5 brilliant silvery, these bands narrowly margined inwardly (basally) with bright fulvous; apical segment piceous. Legs black, anterior tibiæ at base and apex, and all tarsi piceous. Wings hyaline, nervures brown. Length 4.75 mm.

Foothills five miles west of Fort Collins, Colo., August 4th. I dedicate this very distinct species to Mr. Charles Robertson, the author of the "Synopsis of N. A. Oxybelus."

Oxybelus varicoloratus n. sp. ♀.—Head finely closely punctured, occiput somewhat transversely striato-punctate; hind ocelli tending towards the position in *cornutus*. Pronotum with a transverse carina, not angled at sides; mesonotum rather coarsely and closely punctured; mesopleuræ sparsely punctured; scutellum with a weak median carina; squamæ long, narrow, nearly joining behind, with a very strong short lateral tooth, which is not curved and does not exceed the tips of the squamæ; spine very obtusely rounded at the tip, rather short, channeled above, sides nearly parallel; metanotum above and lateral faces striato-punctate; pleuræ transversely striate; the ovate median area convex above within and punctate, concave below and smooth, passing below into a rather long median carina. Abdomen oval, closely, finely punctured, scarcely constricted between the segments; apical segments very coarsely punctured, sides curved and narrowed to a truncate point. Color black; pubescence silky, fine and rather thick all over the body, more so on face and base of metathorax; mandibles piceous at middle; scape black, yellowish at tip beneath, flagellum brown, lighter below; tegulæ and postscutellum yellow; rather broad apical margins of abdominal segments 1–4 silvery, these bands narrowly margined inwardly with yellow, which is interrupted at middle by a spot of rufous; on segments 3–4 the yellow band is very narrowly margined inwardly with rufous; fifth and sixth segments entirely rufous; ventral segments 2–3 with narrow yellow bands. Legs black, fore tibiæ and middle and hind tibiæ at extreme base yellowish rufous; fore tarsi yellow, middle and hind tarsi black at base to light brown at tip. Wings hyaline, veins piceous. Length 6 mm.

Fort Collins, Colo., on flowers of *Solidago canadensis* in Aug.

Oxybelus hirsutus n. sp. ♀.—Nearly related to *varicoloratus*. Differing as follows: pubescence very unusually thick all over body, especially on the head. Pronotum back of carina except spot at middle, tubercles, and spot on either side of scutellum, yellow. The yellow on abdominal segments 1–2, and on ventral segments 2–3, very broad. Abdomen long oval, apical segment triangular, sides straight, tip slightly emarginate. Legs black; middle trochanters beneath at tips and hind coxæ beneath, yellow; fore and hind femora beneath at tips, and middle femora broadly the whole length beneath, yellow; anterior tibiæ and tarsi yellow, middle and hind tibiæ at base and apex, and the hind tibiæ outwardly yellow; middle and hind tarsi brown at base to sordid white at tips. Length 5.5 mm.

Fort Collins, Colo., August. This species differs from *varicoloratus* as above described. With that species it differs from *robertsonii* in having the last two segments of the abdomen rufous, in having yellow bands on the abdomen back of the silvery bands instead of reddish, in being otherwise much more highly colored, especially on the legs, and in various structural characters as described. By the form of the spine and squamæ, and by the coloration, these three species form a very distinct and conspicuous group.

Oxybelus abdominalis n. sp. ♂.—Head, mesonotum and scutellum, coarsely sparsely punctured, more thickly so on the occiput, and finer on the face. Pronotum with a transverse carina, sides scarcely angled; mesonotum with a median depression posteriorly; scutellum and postscutellum with indistinct median carinæ, the former with lateral margins membranous, the latter alike in structure and half the width of the squamæ; squamæ very large, hemispherical, separated behind, lateral points minute and not exceeding tips of squamæ; spine short, broad, broader at tip, evenly rather deeply emarginate; metanotum above, lateral faces and pleuræ strongly punctato-striate; median area small, triangular, having within three strong transverse carinæ, passing below into a long median carina. Abdomen broad oval, scarcely constricted between the segments, not as coarsely punctured as the mesonotum, rather closely on segments 1-2, more sparsely on 3-5; segments 3-6 with strong, broad, blunt lateral spines; last two segments very coarsely punctured, the apical long trapezoidal, truncate at tip. Color black; pubescence silvery, normal; mandibles yellow, with black tips; scape piceous, yellow at tip, flagellum light brownish yellow; spot on either side of pronotum back of carina, tubercles, tegulæ, membranous margins of scutellum, squamæ and most of spine, whitish or somewhat yellowish white. Abdominal segments 1-4 with apical margins broadly silvery, these bands narrowly edged inwardly with yellow; segments 1-2, most of 5, and 6-7 bright rufous. Legs black; fore and middle femora at tips, fore and middle tibiæ, and hind tibiæ at base, yellow; fore tarsi yellow, middle and hind tarsi more dusky. Length 3.75 mm.

Fort Collins, Colo., on flowers of *Solidago canadensis* in August. This species is very distinct from any described North American form in the membranous margins of the scutellum and coloration of the abdomen. It seems to be more nearly related to *mexicanus* than to any other species. Although there is a great variation in size, yet the specimens are identical in other respects.

Oxybelus emarginatus Say.

I have numerous specimens of this very variable species from the East and from Colorado. The following, which I find commonly in specimens contained in my collection, may be added to the specific characters given by Robertson. Lateral point of squamæ minute, not exceeding (rarely attaining) tip of squamæ; spine usually somewhat longer than broad, sides gently rounded; metanotum above with strong oblique striæ, reticulate immediately below the spine, with a small, well-defined, triangular area above and joining the large, median, triangular area. Lateral faces closely finely punctate or striato-punctate; median area long triangular, smooth or faintly striate within; metapleuræ finely punctato-striate, sometimes smooth at the middle; last dorsal segment in female short, triangular, very slightly emarginate at tip; last dorsal segment in male short trapezoidal, truncate apically.

O. sparideus Ckll. (Trans. Amer. Ent. Soc. xxii, 292) as it stands at present, is a synonym of *emarginatus*. There is nothing in the description to separate it. In a note below, the description, Mr. Fox says it differs in the form of the spine and coarser puncturing. A detailed drawing of the squamæ and spine of *sparideus* received from Prof. Cockerell, shows the form usual in *emarginatus*. The difference in the puncturing as here exhibited would not alone be sufficient to separate them.

I have found three forms in Colorado, all very closely allied to *emarginatus*, but presenting structural characters which render it impossible for me to unite them at present. I give herewith comparative descriptions of these three forms. Such is the wide divergence in structural characters that I do not believe either *intermedius* or *dilutus* will prove to be the female of *coloradensis*. Material collected by Prof. Cockerell, in New Mexico, and determined by Mr. Fox as *emarginatus*, should probably be referred to one of these forms.

Oxybelus dilutus n. sp.—Differs from *emarginatus* as follows:—Female: mesonotum and scutellum sparsely punctured; squamæ with lateral points large, strong, nearly straight, scarcely equaling tips of squamæ; spine strongly narrowed to the base; metathorax above with oblique striæ, no reticulations below the spine; median area widely open above, passing into a very short carina below; lateral faces more strongly striate. Length 4.25 mm.

Fort Collins, Colo., August.

Oxybelus intermedius n. sp.—Differs from *emarginatus* as follows:—Female: head and thorax densely, but very coarsely punctured; squamæ with lateral points acute, very large and long, half the length of the whole squamæ and much exceeding the tips; spine narrowed to the base, sides straight, apical third yellowish brown; metathorax above punctate, reticulate below the spine; median area triangular, point attenuate, passing into a very short carina; within smooth at the center, reticulate around the margins. Length 6 mm.

Fort Collins, Colo., August.

Oxybelus coloradensis n. sp.—Differs from *emarginatus* as follows:—Male: position of ocelli tending towards that in *cornutus;* puncturing of the head and thorax as coarse as in *intermedius;* mesonotum in front and behind with a median carina, medially the surface is depressed; postscutellum with two large circular depressions behind on either side, in front of these a median transverse carina; lateral points the squamæ short, strong, blunt, somewhat curved inwardly, but little exceeding the tips of the squamæ; spine much longer than in *emarginatus*, rather strongly narrowed towards the base, apical half yellowish brown; metanotum above with oblique carinæ, reticulate below the spine; median area long triangular, smooth or faintly striate within, extending below into a very short carina; lateral faces rugose. Abdomen more slender than in *emarginatus*, last dorsal segment nearly rectangular; hind tibiæ black, yellowish at base. Length 3.75-4.5 mm.

Fort Collins, Colo., August.

ERRATA.

In article by Dr. Ottolengui, page 126, present volume, one type is credited to Mexico. This should read New Mexico.

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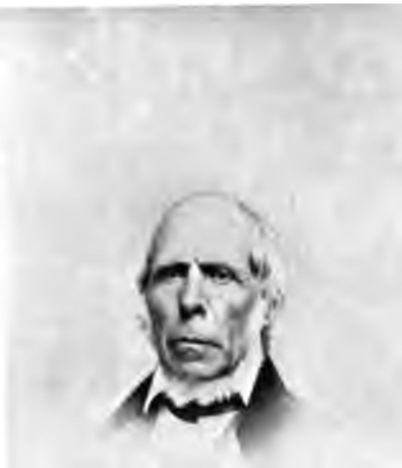

JAMES RIDINGS.

ENTOMOLOGICAL NEWS

AND

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AN INDUSTRIOUS PHILADELPHIA COLLECTOR.

James Ridings was born at Bolton-le-Moors, Lancashire, England, April 30, 1803, died in Philadelphia, July 29, 1880, aged 77 years. His early years present the usual uneventful history of an English boy. In 1830 he came to this city and soon became acquainted with Drs. Rush and McClellan, who knowing his tastes urged him to pursue his studies and gave him every encouragement. He continued collecting in this locality, and, by his example, stimulated others, and thus assisted in forming the nucleus of the Entomological Society of Philadelphia, which was founded in 1859, the name of which was subsequently changed to the American Entomological Society.

He did not confine himself to this vicinity in collecting, but made numerous journeys, more or less distant, to Colorado and Kansas in 1864, Georgia in 1865, and many times to the Shenandoah Valley, of Virginia, which was always a favorite locality with him.

Mr. Ridings was always glad to be of assistance to others, and many among us remember his kindly advice and gifts of specimens. Distrustful of his own ability, and naturally retiring, he never entered the field as a writer, but allowed the numerous new species discovered by him to be made known by others.

Although not a young man at time of the organization of the American Entomological Society, he lived to see it firmly established and occupying a prominent position among kindred societies. He was for a time vice-president of the Society, and for several years curator of its cabinet.

COLLECTING ON THE "CREST OF THE CONTINENT."

By DAVID BRUCE, Rockport, N. Y.

I extract the following notes from my journal, thinking they may interest some readers of the NEWS who have never breathed "the difficult air of the iced mountains' top:"

June 24.—Left Breckenridge (Colorado) at 4 A.M. and had a pleasant walk to the top of the range, the weather had been cold and stormy the day before, but it cleared in the night and the sun rose bright and beautiful, the clouds and mist caps soon disappearing from the peaks. As I went along I picked off a number of fine examples of *Argynnis eurynome* and *Melitæa anicia* from the undersides of the flowers of *Actinella grandiflora*, where they had passed the night. As I was anxious to reach a silver mining camp in Summit County, where I intended to stay a few days, I did not stop to collect much on my way, but sat down a few minutes and watched the antics of a pair of white-tailed ptarmigan that were disturbed by my presence. I was evidently in close proximity to their young brood. The male flew to a rock a few rods distant, and loudly chuckled and cackled as if to encourage his spouse, who went through the usual performance of birds of her kind when the young are threatened with danger, she fluttered across my feet as if almost disabled, sometimes rolling over and gasping as if dying. I had seen these manœuvers several times before and knew what it all meant; the chicks were doubtless close by, lying motionless among the broken rocks. I have on several occasions come suddenly upon a brood, and it is quite surprising how soon and successfully they will conceal themselves even on the bare ground, the mother simulating the cries and actions of a wounded bird to divert the attention of the intruder from her progeny.

I reached the cluster of cabins that constituted the camp. The mine itself was at some distance and difficult of access, everything being taken to and fro on the backs of the "burros" or jacks, as they are more generally called here; a long string of them was just then descending the mountain side by the "Winter trail" the quantity of snow even at this late date rendering the shorter but more precipitous route of the "Summer trail" still unavailable. It was nearly noon, a respectable family kept the boarding house, which was clean and roomy—and the dinner, nearly ready, gave forth its unmistakable fragrance, finding a ready response in my hungry stomach. I came with a good "recommend" from the brother of the proprietors. I had boarded with him at another station lower down, and he had suggested to me this place as the best I could find if I wished to collect at highest elevations—and so I found it. I was warmly welcomed, and told to make myself thoroughly at home. When the men, fifteen in number, came to dinner "Brother Jim's" letter was read before them all, and my status as a collector of "specimens" was explained and quickly understood, and everything was pleasantly arranged in a few minutes; one good fellow, who had quite an interesting collection of minerals, claimed me as "chum;" he had a large cabin of his own and a spare "bunk," so I had a good time at this place for seven days on this occasion, and have made several pleasant visits since. The camp itself was about 13,000 feet above sea-level, the peaks close in the western front ranging from more than 1000 feet higher. Bright sunny mornings and cool cloudy afternoons were the general rule. I usually worked the peaks and upper plateaus until noon, then after dinner I went below into the valleys as far as timber line, which here was at nearly 12,000 feet, always returning to my mountain eyrie in the evening; it froze sharply every night and a good fire was absolutely necessary soon after sundown. The only way to make a thorough investigation of the mountain ranges is to reside in them for a time, and in Colorado the mining camps afford facilities for this purpose generally, although it is not at every one that a stranger would care to stay long. This camp was indeed a notable exception, everything being clean and orderly, and a regular supply of fresh beef sent by contract from Denver every week made a marked contrast to the menu of salt pork or ham, and canned stuff usually found in such places.

Collecting at 14,000 feet altitude is fatiguing work. "At this far height the cold thin atmosphere" is so rarified that respiration becomes difficult and painful to many people after the slightest exertion. The intense cold every night and occasionally by day, when a piercing wind storm, generally accompanied by blinding hail or snow will come on suddenly after hours of the brightest sunshine, sometimes a dense vapor will come creeping up the mountain sides until everything in enveloped in it. This is a source of real danger, for the chilly white mist is so thick that nothing can be seen a yard away; the sense of utter loneliness that overwhelms a visitor to these desolate regions when so overtaken, if far from camp, is apt to bewilder him entirely, and he is in danger of getting lost. These are considerations that deter many collectors from attempting the higher levels or from being very successful if the summit is reached. I have taken companions at various times to these elevated regions, but could never persuade one to stay a second night there. As to "camping out" in the open air "on the top" I have had varied experiences, some comical and laughable enough, and some nearly tragical, but I long ago made up my mind that the best way to "camp out" is to have a good roof over your head; also that an elevated "bunk," if the boards are ever so hard, is preferable to a "lodging on the cold cold ground."

I have said nothing of the convenience of having your meals prepared for you, yet it is decidedly an advantage, and when the tired collector is pleasantly waited upon, and has his coffee sweetened by such an agreeable housekeeper as was the hostess of our camp in Summit County, I am sure he will not sigh for the lonesome camp kettle, the inevitable frying-pan, and the fire that needs constant replenishing yet never burns, and I may feelingly add, the doubtful fun of camping-out alone.

I give a list of the principal Lepidoptera I captured in seven days, at this place, from the tops of the peaks over 14,000 feet down to timber, the lowest elevation being damp and boggy, partly covered with dwarf willows, the numerous creeks and sloughs being plentifully bordered with flowers.

The following list includes a few species taken on a later visit, August 12th; quite a number of interesting *Pyralids* were also taken.

Euptoieta claudia, occasionally at any elevation, very large.

Argynnis cipris, occasionally on flowers at lower levels.

" *eurynome*, everywhere among flowers from highest to lowest places.

" *triclaris*, rather common in boggy valleys below, very partial to flowers of *Polygonum erectum*.

" *helena*, common everywhere above timber.

" *freya*, not rare on grassy slopes everywhere.

Melitæa anicia, very common and in great variety everywhere.

" *palla*, a smoky colored alpine race, very wild and difficult to catch.

Phyciodes camillus, everywhere abundant.

Grapta zephyrus, rather common among willows below.

" *satyrus*, occasionally among willows below.

Vanessa californica, abundant on top of range feeding on flowers of *Saxifraga cespitosa;* also rather common below among willows.

Limenitis weidemeyeri, occasionally amóng willows below.

Ceonympha ochracea, a few on dry side hills below, very large and bright.

Erebia epipsodea; this with the form *brucei* Elwes, taken in about equal numbers in a rather wet location near the camp, 13,000 feet altitude. This is the highest station I have known for this insect anywhere.

Erebia callias, common on grassy mountain sides in company with *Colias meadii* in August.

Erebia magdalena, seen every day on precipitous and cliffy rocks at highest elevations, very difficult to get at generally, owing to the character of its habitat; caught eleven fine examples one day at one favorite spot, a gravelly tract made very damp by the melting snow just above it.

Chionobas brucei, abundant on elevated grassy slopes.

" *æno*, abundant on highest peaks.

" *chryxus*, occasionally anywhere in barren spots.

Chrysophanus snowii, not abundant, yet found about every elevated point; extremely wary and difficult to take, more so than any other mountain species; found a full-fed larva on *Oxyria digyna* (mountain sorrel).

Lycæna sapiolus: on flowers below.

" *antiacis*, " "

" *podarce*, " "

" *shasta*, on gravelly tracts and bare stony spots at highest altitude.

Pieris calyce, a few on highest peaks, strangely different in behavior to the *Occidentalis* found below. They have the same impetuous spiteful flight after intruders that characterises most of the true alpine species; then circling round and returning to the same rock like *Chionobas æno*. The change of habitat in this insect and *M. palla* is remarkable.

Anthocharis julia, a few on flowers at timber line.

Anthocharis coloradensis, a few on flowers at timber line.

Colias meadii, not many seen on my first visit, but very abundant in August; females generally on flowers.

Colias alexandri, occasionally one would sweep over the top of the range as if lost.

Colias scudderii, common among willows below.

Parnassius smintheus, abundant and in great variety of size and color.

Pamphila colorado and *manitoba*, abundant on flowers everywhere.

" *draco* and *Pyrgus*, plentiful on highest grassy slopes.

Hemaris brucei, rare on flowers of *Mertensia sibirica* below.

Deilephila lineata, at flowers everywhere, even to top of range.

Albuna montana, common on yellow *Compositæ*, and frequently on bare rocks.

Alypia lorquinii, frequent below on *Spilobium* and willows.

Anatolmis grotei, on yellow *Compositæ*.

Gnophæla vermiculata, on yellow *Compositæ*.

Platarctia hyberborea, on example on rock below.

Arctia cervinoides, occasionally on bare ground at top, running about, looking extremely like a *Cicindela* at first sight.

Nemeophila petrosa, flying in sunshine over willows below.

Antarctia brucei, the types taken here one ♂ on rock near camp and one ♀ flying near by; reared a small brood from the eggs laid by this individual.

The following Noctuids and Geometrids were taken mostly on flowers by day; the only thing I could attract by light were two very worn *Glaucopteryx*.

Pachnobia manifesta
Rhizagrotis albicosta
Agrotiphila montana
" *rigida*
" *colorado*
Hadena morna
" *alticola*
" *auranticolor*
" *semilunata*
Pseudanarta singula
Perigea albolabes
Oncocnemis dayi
" *tenuifascia*
Polia theodori
Nephelodes violans
Hydrœcia obliqua
Leucania bicolorata
" *adonea*
Xylina carbonaria

Cucullia montana
Plusia snowi
" *angulidens*
" *hochenworthi*
" *divergens*
" *sackeni*
Copablepharon album
Thyreon rosea
Triocnemis saporis
Schinia separata
" *brevis*
Dasyspoudea lucens
" var. *luxuriosa*
" *meadii*
Pseudanthrœcia tumida
Melaporphyrea oregona
Heleolonche modicella
Heliaca diminutiva
Anarta cordigera

Anarta melanopa
" *quadrilunata*
" *richardsoni*
" *impingens*
Litocala sexsignata
Lithostege virginata
Philereme meadiata
Rheumaptera hastata
" *lugubrata*
Gnophos haydenata
Caripeta æqualiaria
Acidalia californiata
" *rubrolineata*
Glaucopteryx sabinii
" *polata*
" *caesiata*
" *magnoliata*

and several yet unidentified species.

———o———

MIXED COLONIES OF ANTS.

By Geo. B. King, Lawrence, Mass.

Considerable has been written by naturalists and others about slave-making ants, but nothing of any importance about the mixed colonies we find associated together living in perfect harmony, and not being enslaved, just the same as the human family in this country and many others, mixed races living in one community, and many of them speaking the same language, understanding each other, and where intelligence prevails, laboring and caring for one another; so likewise do some of our species of ants. Each species of ants has a separate and distinct language of its own, and is also capable of teaching it to other species of ants differing from themselves in color, shape and structural characters, and not only are they capable of teaching it to ants of other forms, but can teach it to the hundreds of other Myrmecophilous insects that are found to inhabit their nests, and in many instances can be only found to be associated with ants. I will not discuss at this time how ants communicate with each other, and teach others their peculiar language. This would require more space than would be allowed for this article. I will therefore only mention a few points that may be of some value to any one who may take exceptions as to whether ants can talk and teach others or not.

The first labor that is taught to all young ants is the especial care of its young in all its stages of development. It is quite natural, therefore, when they are out foraging, away from their own colony, they come across other species of ants, and seeing some of their young larva or pupa, they take some of them home with them to their own colony, where they are cared for as though they were one of their own. In this way many colonies become mixed. In animated nature there is nothing that has so much affection for and takes so much care of, its young, as do the ant family. The young forms of ants that are captured in this way are tenderly cared for, and taught the language of the colony in which it is living, and so lives in peace and happiness; but if we should take any of the adult species from a strange colony and put them with another foreign to their own, they will be immediately attacked, killed, or driven out, in most cases the former. It would make but little difference with which species we may experiment, it will terminate with the like results. On the other hand, we may put strange larvæ and pupæ with other ants, and of an entirely different species; the young forms will be taken in and tenderly cared for as if they were their own, and reared up with that colony, and be able to speak their language and will live perfectly contented with them. We may take again the Aphides, properly called the ant's cows, of which Dr. Bree said that all of the stories told about Aphides being treated as milk cows are myths, by reason of inaccurate observations, "Nature," vol. vi, p. 279, 1872. Aphis is of a different order of insects, widely separated from that of the ants, and most assuredly use a different language from that of the ant tribe. That ants are endowed with the highest degree of intelligence, of all the insect kingdom, is a well proven fact. Collect particular species of Aphides and their eggs, place them in their nests where the Aphides are provided with natural food, and their eggs in a place of safety; this is usually done in the Fall of the year. Some of these eggs will hatch in the ants' nests, and are cared for by the ants, and those that do not hatch are again carried out when the weather permits, in Spring, together with the adult Aphides and placed upon such food-plants as are necessary for them. This they keep on year after year, associated together, understanding each other, the Aphides rendering to the ants their sweet nectar, and the ants in turn providing food and shelter and protection to them. Ants seldom collect adult species of insects for the purpose of domesticating them. They prefer in most instances to obtain the egg, larva or pupa, so that they may be more easily brought up in their way, and more easily taught their language. In some instances they do collect the adult species of other insects to propagate from. In such cases they are guarded very closely by the ants. All ants are not endowed with a high degree of intelligence, no more than all of the human family are. Some are degraded, thieves, and lazy, good-for-nothing insects, and one would be surprised at times to see how they can get their living.

A great deal more could be said, but this will have to suffice for the present. The following is a list of ants that I have found to be associated together, but it should be remembered that *Ponera coarctata* Latr. sub. sp. *pennsylvanica* Buckley, *Solenopsis molesta* Say, *Monomorium minutum* Mayr, var. *minimum* Buckley, are Myrmecophilous ants. *Formica sanguinea* Latr. sub. sp. *rubicunda* Em. is a slave-making ant, and may be classed as a Myrmecophilous sp.

Camponotus castaneus Latr. sub sp. *americanus* Mayr, have associated with them *Lasius niger* Linn., *L. niger* var. *americanus* Em.

Ponera coarctata Latr. sub sp. *pennsylvanica* Buckley, *Solenopsis molesta* Say, *Camponotus herculeanus* Linn. sub. sp. and var. *pictus* Forel. Workers of *Tapinoma sessile* Say and *Formica fusca* Linn. var. *subsericea* Say.

Formica pallide-fulva Latr. have associated with them *Lasius niger* Linn., *L. niger* Linn. var. *americanus* Em., *Formica pallide-fulva* sub sp. *nitidiventris* Em., *Prenolepsis parvula* Mayr, *Formica pallide-fulva* sub sp. *fuscata* Em., *Aphænogaster fulva* Rog. and *Solenopsis molesta* Say.

Formica fusca Linn. have associated with them *Ponera coarctata* Latr. var. *pennsylvanica* Buckley and *Solenopsis molesta* Say.

Formica fusca Linn. var. *subsericea* Say have associated with them *Formica pallide-fulva* sub sp. *nitidiventris* Em. and *Solenopsis molesta* Say.

Formica pallide-fulva sub sp. *nitidiventris* Em. have associated with them *Premœtis parvula* Mayr and *Solenopsis molesta* Say.

Formica sanguinea Latr. sub. sp. *rubicunda* Em. have associated with them as slaves *Formica fusca* Linn. var. *subsericea* Say.

Lasius flavus Linn. sub. sp. *myops* Forel, have associated with them *Aphænogaster fulva* Rog., *Lasius niger* Linn., *americanus* Em. and *Tapinoma sessile* Say.

Lasius niger Linn. have associated with them *Tapinoma sessile* Say and *Solenopsis molesta* Say.

Lasius niger Linn. var. *neoninger* Em. have associated with them *Formica pallide-fulva* Latr. sub sp. *nitidiventris* Em., *Lasius claviger* Rog., *L. flavus* Linn. sub sp. *myops* Forel and *L. niger* Linn. var. *americanus* Em.

Lasius claviger Rog. have associated with them *Monomorium minutum* Mayr, var. *minimum* Buckley, *Solenopsis molesta* Say and *Myrmecina latreillei* Curt. var. *brevispinosa* Em.

Lasius niger Linn. var. *americanus* Em. have associated with them *Formica pallide-fulva* Latr. and *Solenopsis molesta* Say.

Prenolepis parvula Mayr have associated with them *Monomorium minutum* Mayr var. *minimum* Buckley and *Solenopsis molesta* Say. *Aphænogaster fulva* Rog. have associated with them *Ponera coarctata* Latr. sub sp. *pennsylvanica* Buckley and *Solenopsis molesta* Say.

Myrmica lobicornis Myl. have associated with them *Lasius niger* var. *americanus* Em. and *Solenopsis molesta* Say.

Cremastogaster lineolata Say have associated with them *Lasius niger* Linn. var. *neoniger* Em. I have also found mixed pupa of *Cremastogaster* and *L. nuniger* in the same nest together.

From the literature that I have read before I commenced to study Formicidæ in their natural formicaries I was led to suppose that all of our ants were deprived of their wings during or shortly after their marriage flight or swarming period. But this seems not to be the case, for I find winged forms, as stated below, to have lived through our cold Winter months, and further observations will, in all probability, add more to this list. In neither case were there to be found any larva or pupa of the ants in the nests at this time.

WINGED FORMS.

Camponotus herculaneus Linn. sub sp. *ligniperdus* Latr. I have found winged forms of males and females April 20th in a rotten hard pine log.

Camponotus castaneus Latr. sub sp. *americanus* Mayr. I have found winged males and females to be quite common April 28th under stones.

Prenolepis imparis Say. I have found winged males and females April 15th under stones.

Prenolepis parvula Mayr. I have found winged males and females May 4th under stones.

OXYBELUS SPARIDEUS Ckll.—A REJOINDER.

By WILLIAM J. FOX.

In recent papers on *Oxybelus* ("Psyche," March; "ENT. NEWS, May) Mr. C. F. Baker criticises several determinations of species of that genus made by me for Prof. Cockerell. Inasmuch as the material I identified as *O. emarginatus* was, I think, returned to Prof. Cockerell, I am unable to discuss that determination, but granting an error on my part, it behooves me to take Mr. Baker to task for asserting that "*O. sparideus* Ckll. (Trans. Amer. Fnt. Soc. xxii, 292) as it stands at present, is a synonym of *emarginatus*. In a note below the description, Mr. Fox says it differs in the form of the spine and coarser puncturing. A detailed drawing of the squamæ and spine of *sparideus* received from Prof. Cockerell, shows the form usual in *emarginatus*. The difference in the puncturing as here exhibited would not alone be sufficient to separate them."

Fortunately the type of *O. sparideus* was placed by its author in the American Entomological Society's collection, and after a re-examination and comparison with *O. emarginatus*, I am prepared to re-assert all contained in the foot-note above referred to. Overlooking the coarse punctuation, which Mr. Baker considers of no importance, the spine of *sparideus* is seen to be shorter and broader throughout, and with its lateral margins strongly rounded-out; its emargination is not so deep, and in coloration is reddish testaceous, except at extreme base, whereas in *emarginatus* it is entirely black. In addition, *sparideus* differs from *emarginatus* by the continuous pronotal fascia, the yellow spots on scutellum, and the red tip of abdomen; the latter, while occurring in the female of *emarginatus*, is absent in the male.

Finally, I would suggest the advisability of examining the type or types of a species, if possible, before jumping to conclusions regarding synonymy. If another suggestion be not untimely, and to save Prof. Cockerell's ability as an artist from criticism, let me add the possibility of Prof. Cockerell's specimen or specimens being *O. emarginatus*.

COLLECTORS who are also fond of gunning, fishing, sailing, etc., may have a variety of sport and a good time generally, by patronizing our friend, Dr. O. D. Foulks, at Stockton, Md., who advertises in this number.

On the Occurrence of Chionobas tarpeia in North America.

By H. H. LYMAN.

This species, according to the catalogues of Kirby and Strecker, was described, in 1771, by Peter Simon Pallas, though many authors refer to Esper as the describer in 1777—1783, the dates varying. I do not know whence the types came, but doubtless they were Russian. In Butler's Catalogue of the Satyridæ in the British Museum, published in 1868, the only locality given is, curiously, "Arctic America."

In Edwards' "Synopsis," published in 1872, this species was not given, but it was included in his catalogue of 1877, apparently on Butler's authority, though this is not definitely stated.

Strecker, in his catalogue published in 1878, said, on p. 155, "Chion. tarpeia, an Altaian species, has been by some authors placed with the North American fauna, but without doubt erroneously; I do not believe it ever has been or ever will be found to occur in this country."

In Edwards' Revised Catalogue of 1884 it is given doubtfully, and explicitly on the authority of Butler.

I had long inclined to the belief that a poor specimen of *Chionobas varuna* had probably been mistaken for this species, though I found it difficult to understand how so gross a blunder could have been made by an able Lepidopterist, but in looking over the fine collection of Dr. Henry Skinner in May, 1894, I was much interested at finding an undoubted specimen of *tarpeia* with a label giving the locality as "Hudson's Bay."

The specimen came from the Aaron collection, but Dr. Skinner knew nothing of its history.

Of course the label may be fictitious and unless the history of the specimen can be traced, it would not afford sufficient evidence to settle the question, but the authorities of the British Museum ought to be able to throw some light on it if the specimen or specimens which Mr. Butler had before him when compiling his catalogue are still in existence.

The diagnosis of this species, given by C. J. Maynard in his "Manual of North American Butterflies," is utterly untrustworthy, his statement that the ocelli are white pupiled beneath being especially erroneous.

"A NEW PARASITE," FURTHER REMARKS.

By FREDERICK BLANCHARD.

The interesting article by Mr. Lafler in the NEWS of February recalls an observation of my own made many years ago, which may throw some light on one of the questions raised as to how the Tachinid fly got at the provisions.

While working on the railroad, on a very hot day, a large blue wasp was seen dragging a grasshopper along the ground. The grasshopper was bulkier than itself, but the wasp was vigorous enough to handle it with comparative ease. Soon, in the course of a yard or so, it arrived at a hole it had evidently previously excavated, dropped the hopper and dived into the hole, throwing out some sand; it then backed out quickly, and making two or three rapid turns about the hole it rushed in again; this movement took place two or three times when, at last, it seized the grasshopper which had lain unmolested during the time and dragged it into the hole. Meantime I had noticed two quite small and very active flies hovering about and occasionally alighting in the vicinity of the hole, but paying no attention to the grasshopper. Whenever the wasp appeared they were driven away for the instant, but immediately returned. When the wasp disappeared with the grasshopper there was a sudden and instant copulation of the flies, and in the same second, almost, the ♀ extruded some small masses of eggs, more or less attached together, on the margin of the hole and flew away. The wasp, after an absence limited to a few seconds only, reappeared and at once set to work in the liveliest manner to scratch gravel into the hole, and with the very first grains of sand the eggs were also tumbled in, and no doubt reached their intended destination.

The flies showed no desire to enter the hole themselves, but the wasp evidently suspected that they were in the neighborhood for no good purpose.

While I have used the term eggs, I am strongly of the impression that larvæ were extruded by the female fly, and that they showed some motion.

Mr. ROBERT T. SAUNDERS, of Malden, Mass., intends to spend the Summer at Rainier, Washington, for his health, and will devote considerable time to collecting and studying entomology.

THE IMPRUDENT PHRYGANIDIAN.

By VERNON L. KELLOGG, Stanford University, Cal.

The fittest survive, but not all that are unfit are extinct, else how does that interesting moth, *Phryganidia californica*, continue to exist as a species in very tolerable health and prosperity? For this solitary remnant of what may have been one time a widely-spread and well represented family of moths displays, once each year in its life-history, a reckless disregard of prudence that may sometime cost it dear.

During the Autumn of 1894 and Spring of 1895, this moth was very abundant in the vicinity of the University (Stanford), and did much damage to the liveoak trees, which are the pride and the beauty of the valley. This opportunity to work out the life-history of an insect which, because of its systematic isolation, has always been one of special interest to entomologists was not to be lost. The results of the work have been published elsewhere in detail, I wish to refer here only to a partly successful attempt at self destruction which *Phryganidia* makes annually, and which is the imprudence referred to.

There are two generations of the insects each year, and the Winter is passed in the active larval stage of the second generation. The natural and usual host of the insect is the liveoak, which is green leaved throughout the Winter, and thus furnishes the food necessary for the active, feeding, Winter larvæ. The larvæ are not restricted to the liveoak, however, but those of the Summer generation may be found on the white oak, Douglas' oak, and on two or three other species of deciduous oaks. At the time of the oviposition of the Autumn eggs (the eggs are laid in patches of thirty to fifty on the leaves) the leaves of the deciduous oaks have not yet fallen; but they are certainly going to fall. *Phryganidia*, however,—and this is the imprudence,—lays its eggs on the leaves of deciduous oaks as well as those of liveoaks, and just about the time of the hatching of the Autumn larvæ the leaves of the white oak begin falling. All of the unfortunate *Phryganidia* youngsters hatching from the eggs on these leaves waken into life simply to die of starvation. Thoughtless mother! The continued existence of the species is due to the fact that a part of the eggs are laid on the liveoak leaves.

The new leaves of the deciduous oaks appear about April 1st, shortly before the time of laying the eggs for the Summer brood of larvæ. The eggs of this brood can be laid, therefore, on both deciduous and liveoaks with the happiest of outcomes. Perhaps it is just this successful outcome of the Spring's essays in maternity that breeds in *Phryganidia* that unwarranted confidence in the white oak that is annually attended with such fatal results to the Autumn young. *Phryganidia* has already one serious obstacle to its increase in the person of one *Pimpla behrensii*, who makes a point of killing a large proportion of the *Phryganidia* youth each year, and it will be well for our interesting moth to refrain from too many imprudences if it wishes to hold its own in the lively struggle for living.

ON THE GENUS MELEOMA A. Fitch.—The very interesting article by Mr. Banks in the ENT. NEWS for March, 1896 (pp. 95, 96), induced me to re-examine my material for this genus. I find two forms in four examples, all collected by the late H. K. Morrison and received by me from him. One specimen from Mt. Washington was seen by the late Dr. Hagen and bears his label, "*O. signoreti;*" another, from Mt. Washington agrees perfectly therewith, save that the antennæ are paler; both of these agree structurally with *M. signoreti* as defined by Mr. Banks. A third from Colorado, and the fourth, from Mt. Washington, agree structurally and otherwise with the description of *M. slossonæ* Banks, the only discrepancy between them being that in the third the black line on the sides of the face is continuous (as described), whereas in the fourth this line is broken up into two separate spots one on the genæ, the other on the clypeus (such a variation is very frequent in Chrysopidæ). These two forms differ immensely in the structure of the apex of the abdomen, and were unhesitatingly placed in my collection as *the sexes of one species;* such also was Dr. Hagen's opinion according to notes he sent to me. Now, however, Mr. Banks says he has the female of *M. slossonæ*, and that it differs from *Chrysopa* chiefly in the antennæ of that sex being placed more widely apart. Amongst my numerous North American Chrysopidæ I can find nothing that will answer to this description. That the two *M. signoreti* and the two *M. slossonæ* in my collection are respectively of different sexes is, I think, certain. In writing these notes I would by no means imply an error of observation on the part of Mr. Banks, but the facts are sufficiently suggestive to warrant further inquiry.

While on the subject of North American Chrysopidæ it occurs to me that several species have been lately described as pertaining to my genus *Nothochrysa*. I possess only one of these, from California. In *facies* it differs somewhat from the Old World species, and more resembles *Hypochrysa*, and it is probably on the strength of such a suggestion somewhere published by me in years gone by that this latter genus has been considered North American. I think, however, its position is in *Nothochrysa* rather than in *Hypochrysa*. According to the description, *Chrysopa virginica* A. Fitch, probably belongs to *Nothochrysa*.—ROBERT McLACHLAN.

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., JUNE, 1896.

WE have a great many papers on hand awaiting publication, but the thirty-two pages we issue each month are not sufficient for the increased number of papers received. Now, to meet this demand and not be obliged to refuse important papers, we would like to increase the number of pages of the journal, and we can only do this by an increase in the subscription list. Induce your entomological friends to subscribe and help along a good work. There are entomologists in this country who should subscribe to the NEWS but do not, and there are others who have failed to renew their subscriptions. Some say they can't afford the one dollar a year, but we feel sure the number who really can't afford it must be a very small one. The NEWS is in a sound condition, financially, but it dislikes to be tied down to a fixed number of pages; in fact it is ambitious, and does not desire to stand still but grow, and we think those interested in the study of entomology should see that it does. Those that do not see their papers in this issue will understand why.

THE Fifth Annual Excursion of the Entomological Societies of Brooklyn, Newark, New York and Philadelphia will be held this year on July 4th, near Newark, N. J. All entomologists are invited. Bring your luncheon. Those from Philadelphia and vicinity will take the 6.50 A.M. train from Broad Street Station.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

"Raupenleim" and "Dendrolene."—As a result of the experience gained during the season of 1895 in the use of these materials I spoke rather positively concerning their usefulness on various occasions. I have seen no reason to change my conclusions as to their value for the purposes recommended, but it has been found that it is not desirable in all cases to leave the material on continuously. In the case of the peach orchard upon which experiments were made, the story came after mid-Summer that the "Dendrolene" had killed the borers in the trees. I was scarcely ready to credit that at the time, but I am much more ready to do so now. At the time mentioned there wss no sign of injury to any of the trees from either "Raupenleim" or "Dendrolene," nor was there any in September, at which time the "Raupenleim" was pretty well dried up, ineffective as a covering or for any other purpose, while the "Dendrolene" was in good condition and fully protective for all practical purposes. It seems that this continuous covering is not of advantage to thin-barked, rapidly growing trees, like a young peach. It is found that now, just about the time the trees are starting, that there has been a decided check to growth at the point where the "Dendrolene" has been applied. The outer layer of bark has become lifeless and discolored, while beneath, that upon the trees, is still perfectly healthy. The trees referred to are peach trees, four years old, thrifty and growing rapidly. The treated trees are just as healthy, to all appearances, as those not treated, and, except for the death of the outer layer, no injury has been sustained, but this indicates the necessity of a little care in the use of the material. If it is applied on peach trees in the Spring against the borer, it should be mixed with an equal proportion of dry earth, which will leave it just as effectual as a covering to keep out the borer, and will deprive it of some of its penetrating qualities. The crust thus formed can be easily scraped off after mid-Summer, when danger from borers is over, and this will avoid the danger of injury to the bark. The "Raupenleim" had a similar, though much less marked effect, due to the fact, probably, that it is much more viscid, and dries up in a comparatively short time instead of simply getting thin under the influence of heat, as does the "Dendrolene." On apple trees, where this same material was applied liberally to keep out the borers, it was perfectly effective, and not the least trace of injury of any kind was found upon the tree or bark. Experiments will be continued with the material in the direction of mixing it with land plaster or other substances, to reduce its action upon the trees. I am just as much convinced of its usefulness as ever, but wish to suggest to those who intend experimenting with it the desirability of caution in certain cases.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.--All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

Mrs. A. T. SLOSSON will soon go to Gale Cottage, Franconia, N. H.

TRANSACTIONS of American Entomological Society, volume 23, number 2, will contain papers by Leng and Hamilton, on the Lamiinæ of North America; and Ashmead, on Parasitic Hymenoptera.

Prof. T. D. A. Cockerell proposes to found a health resort for scientific persons, teachers and kindred spirits, at Las Cruces, New Mex. Loafers, politicians, or other self-interested or ignorant persons need not apply. The scheme is a good one, and should prove successful.

THE collection of the American Entomological Society has recently been enriched by the presentation, by Mr. Cockerell, of the types of nearly all of his species of *Perdita*, described in the current number of the "Proceedings" of the Academy of Natural Sciences of Philadelphia.

IT is well known that a full-grown larva of *Thyreus abbotti* is a formidable appearing creature to the uninitiated, which is in no wise lessened by its habit of turning its body quickly from side to side and uttering a squeaky noise when alarmed. A lady of my acquaintance whose porch is overhung with an *Ampelopsis quinquefolia* or woodbine, came to me one day and said "that there were the horridest great worms on her woodbine; they were as long as that"—measuring off a good eight inches on her forefinger and hand—"and as big round as any thumb with one big eye in the middle of their head. There was one got into the sitting-room this morning and I had to get Charles to come with the tongs and carry it out. Whenever I went near it it would thrust its head round and run out its tongue and hiss." Here I exploded. "Oh, you can laugh if you want to, but you wouldn't have laughed if you had been there. I aint so afraid of them as my sister is though. There was one got into her parlor one day when she was alone; she is an old maid, and she had to wait until the neighbors got home before she could get it out."

The occasion of her visit to me was to find out what was eating up her peas. On examination I found great numbers of half-grown larva of

H. io, and explained also another mystery, where the nettles were that stung them while they were picking peas. They were quite ready to believe that the innocent *abbotti* was capable of spitting poison, but never thought of receiving injury from the fuzzy little *io*, which is quite common here and frequently troublesome to our harvesters, but this is the only case I know of where it was the cause of real injury.—W. F. FISKE.

A CONSERVATIVE.

The garden beds I wandered by
One bright and cheerful morn,
When I found a new-fledged butterfly
A-sitting on a thorn,
A black and crimson butterfly,
All doleful and forlorn.

I thought that life could have no sting
To infant butterflies,
So I gazed on this unhappy thing
With wonder and surprise,
While sadly with his waving wing
He wiped his weeping eyes.

Said I, "What can the matter be?
Why weepest thou so sore?
With garden fair and sunlight free
And flowers in goodly store,"
But he only turned away from me
And burst into a roar.

Cried he, "My legs are thin and few
Where once I had a swarm!
Soft fuzzy fur—a joy to view—
Once kept my body warm,
Before these flapping wing-things grew
To hamper and deform."

At that outrageous bug I shot
The fury of my eye;
Said I, in scorn all burning hot,
In rage and anger high,
"You ignominious idiot!
Those wings were made to fly!"

"I do not want to fly," said he;
"I only want to squirm!"
And he drooped his wings dejectedly,
But still his voice was firm;
"I do not want to be a fly!
I want to be a worm."

O yesterday of unknown lack!
To-day of unknown bliss!
I left my fool in red and black;
The last I saw was this:
The creature madly climbing back
Into his chrysalis.

CHARLOTTE PERKINS STETSON.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be **limited to twenty-five** for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. **Please put date of capture and exact locality on each specimen.** Before sending insects for identification, read page 41, Vol. III. Address all packages to Entomological News, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the anatomy of insects, however, whether relating to American or exotic species will be recorded.

1. ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, T. xl, 2. —New species of Thysanoptera, E. Bergroth. New Curculionidæ from British East Africa, J. Faust.

2. JOURNAL OF THE CINCINNATI SOCIETY OF NATURAL HISTORY, xviii —The probable origin and diffusion of *Blissus leucopterus* and *Murgantia histrionica*, F. M. Webster.

3. ENTOMOLOGISCHE NACHRICHTEN, xxii, H. 6.—Some new Cetonidæ, G. Schoch.

4. THE ENTOMOLOGIST'S MONTHLY MAGAZINE, April, 1896.—On an intermediate "Aonidiform" stage in *Aspidiotus*, E. E. Green. On the grouped abdominal glands of the Diaspinæ, ibid.

5. THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION, April, 1896.—Tabulation of the subgenera included in *Apatela*, Hb., with their respective types, A. R. Grote. Larval genera and subgenera in *Apatela*, ibid. On the genera in the Apatelidæ (= Acronyctidæ).

6. TRANSACTIONS OF THE HORTICULTURAL SOCIETY OF CENTRAL ILLINOIS, vol. xxix (new series) [Extract].—Insects beneficial to horticulture, W. G. Johnson.

7. Nineteenth Report of the State Entomologist of Illinois, Appendix [Extract].—The Mediterranean flour moth (*Ephestia kuehniella* Zell.), W. G. Johnson.

8. ANNALS AND MAGAZINE OF NATURAL HISTORY, April, 1896.—Notes on some Ethiopian species of Ischnurinæ . . . , R. I. Pocock. On the genus *Dactylipalpus* Chapuis, and two new genera of Scolytidæ from Africa, W. F. H. Blandford.

9. PROCEEDINGS OF THE CALIFORNIA ACADEMY OF SCIENCES (2), vi, [Extract].—New Mallophaga, I . . . , V. L. Kellogg.

10. Transactions of the American Entomological Society, xxiii, 1.—The taxonomic value of the antennæ of the Lepidoptera, D. Bodine. New North American spiders and mites, N. Banks. Supplement to "The Crabroninæ of Boreal America," W. J. Fox. The Dipterous genus *Tachytrechus* and *Macellocerus*, J. M. Aldrich. A monograph of the genus *Synergus*, C. P. Gillette.

11. Journal of the New York Microscopical Society, xii, 2.—The pygidium of the common flea, A. C. Stokes.

12. Oversigt over det K. D. Videnskabernes Selskabs Forhandlinger, 1896, No. 1.—Contribution to the natural history of the Strepsiptera, F. Meinert.

13. Acta Societatis pro Fauna et Flora Fennica, vol. ix.—Corrodentia Fennica, I, Psocidæ: Catalogue and descriptions of the Psocidæ of Finland, O. M. Reuter. Neuroptera Fennica: Catalogue and descriptions of the Neuroptera of Finland, ibid.

14. Proceedings of the United States National Museum, vol. xviii [Extracts].—*Priodesmus*, a new genus of Diplopoda from Surinam, O. F. Cook. On *Geophilus attenuatus* Say of the Class Chilopoda, ibid. On the arrangement of the Geophilidæ, of family of Chilopoda, ibid. East African Diploploda of the Suborder Polydesmoidea, collected by Mr. William Astor Chanler, ibid.

15. The Canadian Entomologist, May, 1896.—John M. Denton, anonymous. Captain J. Gamble Geddes, anonymous. Two new species of *Papirius*, J. W. Folsom. *Lepyrus*, J. Hamilton. The male of *Monodontomerus montivagus* Ashm., T. D. A. Cockerell. The cigar-case-bearer of the apple (*Coleophora fletcherella*), J. Fletcher. New American parasitic Cynipidæ (Allotriinæ), C. F. Baker. Notes on bees of the genus *Prosopis* . . . , C. Robertson. Notes on New Mexico and Arizona Hymenoptera (cont.), C. H. T. Townsend.

16. Sitzungs-Bericht der Gesellschaft naturforschender Freunde, 1896, No. 3.—Herr Wandolleck communicates on the antennæ of *Onychocerus albitarsis* (no title).

17. Die Bienen Europas, Theil II, H. Friese.

18. United States Department of Agriculture (Division of Entomology), Bulletin No. 1, New Series.—The honey bee: a manual of instruction in Apiculture, F. Benton.

19 Horæ Societatis Entomologicæ Rossicæ, xxix.—Contribution to the bee fauna of Turkomania, F. Morawitz. Entomological miscellany: On the spinning-glands of tenthredinid larvæ; On the œsophigal sacks (Schlundsäcke) of the saw-flies and other insects, N. Cholodkovsky. New Asiatic Coleoptera, A. Semenow. Revision of the subgenus *Compsodocadion* Ganglb., B. E. Jakowleff.

20. Biologia Centrali-Americana, Zoology, pt. 128.—Arachnida Araneidea, pp. 161–168, pl. 19 (*Epeirotypus* to *Clubionia*), O. P. Cam-

trip from which Mr. Laurent and he had just returned, it embraced their experience up to their arrival at Enterprise, Fla., from which place they returned to Jacksonville; the doctor returning home and Mr. Laurent continuing on to Gulf Hammock, Fla. The doctor exhibited, by request, some of the Coleoptera captured, he having otherwise intended deferring the exhibition of the same until he had completed mounting the entire collection. Mr. Laurent also exhibited the dragon flies taken, and a number of interesting photographs of incidents and localities visited. The success of the trip can only be ascertained when the whole of the collection is carefully gone over and mounted, as they have gathered quite a variety and quantity of material.

The next meeting will be postponed until the return of Mr. Wenzel from the South.

No further business being presented the meeting adjourned at 10.30 P.M. to partake of a sumptuous banquet provided by Mrs. Castle, at whose request the meeting was held at the doctor's residence in welcome of the return of the collectors from Florida.

THEO. H. SCHMITZ, *Secretary*.

The Entomological Section

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF MEETINGS.

The following papers were read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS:

A NEW GENUS OF HIPPOBOSCIDÆ.

By S. W. WILLISTON.

BRACHYPTEROMYIA gen. nov.

Allied to *Oxypterum* Leach (*Anapera* Meigen, *Chelidomyia* pt. Rond.), but the wings rudimentary and functionless. Antennæ inserted laterally, porrect, projecting nearly as far forward as the proboscis, subcylindrical, the distal portion clothed with long black hair. Eyes very small, oval, situated on the sides of the head; ocelli wholly wanting. Legs stout; claws tridentate; pulvilli elongate; empodium slender. Abdomen narrow (♂): hypopygium protruding, subcylindrical, and moderately dilated distally. Wings rudimentary, scale-like, subtriangular in shape, about as broad as long and protruding but a short distance beyond the margin of the scutellum, with indistinct indications of veins, the costal portion provided with black hair; the distal portion convex in outline; femora stout.

Brachypteromyia femorata n. sp. ♂.—Brownish yellow in color, the abdomen, save the basal portion, appearing black beneath the dense black hair. Hair everywhere black and usually long; on the top of the head it forms two long rows, beginning on either side of the base of the antennæ and convergent posteriorly. On the sides of the mesonotum it is somewhat tuft-like in front and behind, and forms a long, dense row on the scutellum; the hair of the narrow portion of the abdomen very abundant and shorter; that of the femora rather sparse. The color of the claws, save the basal tooth, is black. Length 6 mm.

One specimen, Wyoming, on *Macropis melanoleucus*. Collected by Mr. R. C. Gowell, of the University of Kansas.

The genus is, as already stated, closely allied to *Oxypterum*, and it is possible that the difference between the elongated and pointed wings of that genus and the short, functionless, rounded ones of this may not be considered generic. From *Lipoptena*, the presence of three teeth on each of the claws and the structure of the antennæ will at once distinguish the genus.

I wish to record here the following genera of Diptera which I have recognized from North and Central America, known hitherto only from South America, Europe, India, Africa and the Radak Islands: *Miastor* Meinert, *Camptocladius* Wulp, *Orthocladius* Wulp, *Polymera* Wiedemann, *Mongoma* Westwood, *Lolphoteles* Loew, *Analcocerus* Loew, *Campeprosopa* Macquart, *Damalis* Fabricius, *Dicranus* Loew, *Leiomyza* Meigen, *Willistoniella* Mik. The greater part of them are represented by species yet undescribed.

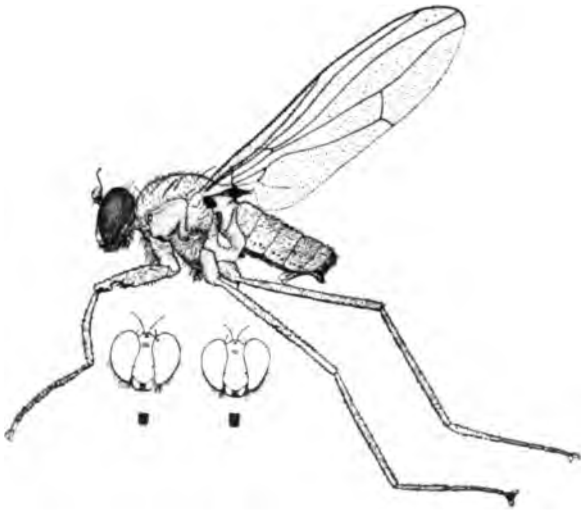
———o———

A NEW GENUS AND SPECIES OF DOLICHOPODIDÆ.

By William Morton Wheeler, Ph.D.

PARHYDROPHORUS nov. gen.

Face broad in both sexes, but little narrower in the male than in the female, reaching to the lower corner of the eyes, with a small swelling on either side of its lower third near the orbit. Eyes distinctly pubescent; cheeks narrow. Antennæ like those of *Hydrophorus:* first joint without hairs its dorsal surface, second joint short and transverse, third joint rounded, with a distinct ventral notch and a dorsally inserted, two-jointed, bare arista. Front excavated behind the antennæ, with the usual bristles; palpi of moderate size, incumbent; proboscis not very prominent; inferior orbit conspicuously bearded. Thorax rather deep and long, convex above, with a slight but distinct depression in front of the scutellum. On either side of the dorsum there is a row of long bristles, and between these rows there are several series of small weak bristles. Posteriorly there is a large and conspicuous bristle on either side of the prescutellar depression ; scutellum bare, with the usual four bristles. Abdomen with five visible segments in both sexes, short, somewhat flattened dorsoventrally, especially in the female; hypopygium embedded, but with its appendages frequently exserted and visible. The most prominent of these consist anteriorly of two pairs of slender hook-like processes directed downwards and forwards, and posteriorly of a median spoon-shaped structure which is directed downwards and backwards; middle and hind legs slender, much longer than the fore legs ; fore femur enlarged throughout its length in the male, with a broad deep notch near the apical end, and a series of spine-like bristles along the under surface near



Parhydrophorus canescens ♂ ; *a*, face of ♂; *b*. face of ♀.

its base; fore femur of the female thickened at the base, but tapering to the apex, without the deep notch, and with several stout bristles along its under surface; inner side of hind trochanter of male armed with a thick and pointed spur; first joint of hind tarsi without bristles, twice the length of the second joint; pulvilli of all the tarsi dilated. Wings long and of rather uniform width, with prominent anal angle; cross-vein oblique, only half its length from the posterior margin; third and fourth veins lyrate, more parallel at their terminations; sixth vein small and indistinct.

The genus *Parhydrophorus* is closely allied to the genera *Scellus* and *Hydrophorus*, especially to the latter. The male may be readily distinguished from the male *Hydrophorus* by the deep notch in the fore femur, the prominent spur on the hind trochanter, and the structure of the hypopygium. The unpaired spoon-shaped appendage of the latter organ is represented in *Hydrophorus* by a pair of small appendages. The whole hypopygium, too, in the latter genus is smaller and much more concealed. Both the male and female of *Parhydrophorus* lack the spur-like projection at the tip of the fore tibia, a character which is strikingly developed in *Scellus*, and also faintly developed in many species of *Hydrophorus*. In general appearance the flies of the new genus differ from the species of *Hydrophorus* in the longer and whiter hairs covering the legs and the greater portion of the body.

Parhydrophorus canescens nov. sp.

Male.—Antennæ black, basal joint more brownish in a certain light; arista thick, black, with a white tip. Face so thickly covered with white dust that the ground color is invisible. Palpi grayish, with rather long white hairs; front covered with an extension of the white dust of the face, but less thickly, so that the coppery green ground color may be seen; frontal bristles and the stout hairs of the superior orbit black, the rather dense beard on the inferior orbit glistening white, or in some specimens more yellowish; occasionally also with an admixture of black hairs above. Thoracic dorsum metallic-green, with four narrow cupreous vittæ; in many specimens these are indistinct and seem to have fused to form a large cupreous patch posteriorly. The small hairs arranged in rows down the middle of the thoracic dorsum are white, the bristles in the lateral rows black. Pleuræ dull metallic-green anteriorly, blackish posteriorly, covered with a rather thick layer of gray dust. There is a conspicuous tuft of delicate white hairs just above the insertion of the fore coxa and another tuft of longer and sparser white hairs above the insertion of the middle coxa; scutellum metallic-green or coppery, with black bristles.

Abdomen metallic-green, with a more or less pronounced coppery reflection on the dorsal surface; laterally it is thickly dusted with white. The black depressions forming a series along either side are small and circular. The whole surface of the abdomen is clothed with silky white hairs, which are conspicuously long on the sides of the segments. Anterior, or inner appendages of the hypopygium yellow; spoon-shaped posterior appendage with a faint ridge along its convex dorsal surface black, with white hairs and dust. Legs dull metallic-green, rather thickly clothed with white hairs; coxæ with white hairs, longest and most conspicuous on the anterior faces of the fore pair; fore femur with from four to six equidistant truncated black spines like bristles on its under surface. The proximal edge of the broad and deep notch is furnished with a dense row of minute black spines; the distal edge is smooth and black on its inner surface. The tip of the fore femur on its inner side bears a small tuft of yellow hairs, on its outer side a series of graduated black bristles. The fore tibia is bent near its middle and armed with three small black bristles on its outer surface; its inner surface bears a short series of minute spines near the proximal end; towards the tip of the fore tibia the white hairs are longer, and on the inner side at the extreme tip form a short dense fringe; fore tarsi plain, first joint about twice the length of the second; middle and hind legs slender and beset with short black bristles at intervals. First joint of middle tarsi about twice as long as the second, last joint distinctly enlarged, subtriangular, black; hind trochanter armed with a sharp spur, which projects downwards at right angles to the hind femur. This spur is striated, and seems to consist of several agglutinated black bristles. The first tarsal joint is distinctly thicker than the corresponding joint of the middle leg; pulvilli of all the legs white. Wings grayish hyaline, yellow at the base, and for some distance along the costal border; veins yellow basally, brownish distally, the costa often yellow for fully two-thirds of its length. The third and fourth veins diverge with a gentle but distinct curvature and then converge to pursue a more parallel course towards the tip of the wing, at which they again diverge very slightly; halteres clear light yellow; tegulæ knob shaped, light yellow, with a dense tuft of silvery white cilia. Length of body 4-4.5 mm.; length of wings 4.5-5 mm.

Female.—Face with a thick layer of golden-yellow dust, which extends up over the metallic-green front; dust on the thorax thicker than in the male and more yellowish. Abdomen broader and flatter. Legs plain, hairs on the fore coxæ shorter, fore femur with only the faintest indication of a notch, the under surface armed with several pointed and irregularly arranged bristles. The three black bristles on the outer surfaces of the fore tibia weaker than in the male; middle and hind legs quite plain, the former without the dilatation of the fifth joint and the latter without the spur on the trochanter; pulvilli of all the tarsi somewhat smaller than in the male. Length of the body 4-5.5 mm.; length of wings 4.5-6 mm.

Described from twelve male and twelve female specimens. These were collected in part by Mr. A. W. Snow about forty miles north of Lusk, Wyoming, during July, 1895, and in part by myself, in the same locality, during August of the same year. The flies were found running about in swarms on the sunny surface of small pools which were rapidly drying up in the bed of Little Lightning Creek. Their habits resemble those of *Hydrophorus*, with species of which they were found associated. They were very agile and not easily captured.

——o——

A NEW EMPID WITH REMARKABLE MIDDLE TARSI.

By WILLIAM MORTON WHEELER, Ph.D.

Rhamphomyia scaurissima nov. sp.

Male (Fig. 1).—Black. Face very broad for a male, with a few bristles along either orbit. Antennæ velvety black; first and second joints with rather stout hairs; first joint short and cylindrical; second joint spherical; third joint cylindrical, gradually tapering to a bluntly rounded tip, on which the short style is inserted. Palpi slender, black, with prominent black hairs. Proboscis as long as the head, yellowish at the tip, labella fuscous, hairy; bristles of the front and hairs of the posterior and inferior orbits prominent, black. Thorax opaque, dusted with gray, especially on the pleuræ and just in front of the scutellum; bristles prominent, confined almost exclusively to the dorsal and humeral regions; scutellum dusted with gray and beset with several black hairs. Abdomen usually more shining than the thorax, and covered with shorter black hairs; hypopygium large, porrect and gaping, fringed with long black or brownish hairs, which are usually directed backwards; central filament long and whip-like, almost completely disengaged. Legs black, in some specimens more piceous, hairy; tips of coxæ frequently yellowish; first joint of fore tarsi perceptibly incrassated; middle tibia shortened and thickened, with very long and conspicuous hairs; joints of the middle tarsi (Fig. 3) curiously modified as follows: First joint consisting of two parts, a globular base articulating

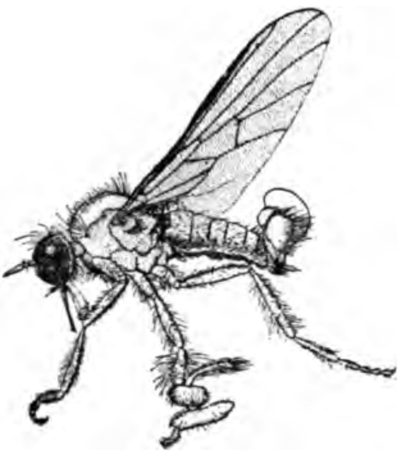


Fig. 1.—*Rhamphomyia scaurissima* ♂.

with the tibia, and a large scale-like appendage attached to the outer surface of the globular base. This scale-like appendage is concave on its inner and convex on its outer surface and overlaps the second joint. The globular base is beset with prominent hairs radiating out in all directions; the hairs on the scale-like appendage are shorter and stouter. The second joint, which articulates with the globular base of the first joint, is large and cylindrical and sends out from its proximal end a long posteriorly directed club-shaped appendage, clothed with a pencil of long hairs. The hairs on the shorter limb of the joint are smaller and more or less recurved on the anterior face. The third joint is enormously enlarged transversely to form a boat-shaped structure. Its hairs are limited to certain portions of its surface. The fourth and fifth joints are comparatively small, the former being perceptibly swollen, the latter resembling the corresponding joint of the fore and hind tarsi. Hind legs plain, except for the fringe of long hairs on the tibiæ, especially on their posterior surfaces. Wings rather long and narrow, grayish hyaline, with brown veins; costa near its middle with a prominent black thickening, just beneath which is a long and narrow brown stigma; second vein with a small thickening just before its junction with the third vein; discal cell of medium size; halteres fuscous, capitulum somewhat darker. Length of body 3.5 mm.; length of wings 4 mm.

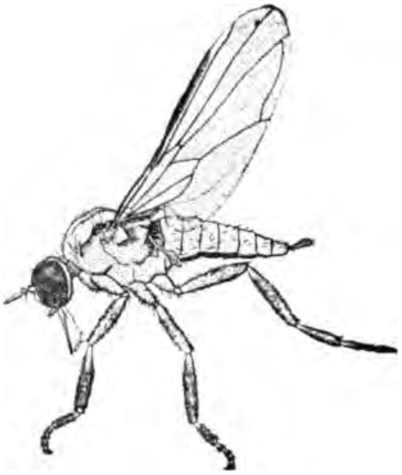


Fig. 2.—*Rhamphomyia scaurissima* ♀.

Female (Fig. 2).—Face somewhat broader than that of the male. Thorax with a thicker layer of gray dust and shorter bristles. Legs plain, with much shorter hairs. Wings with somewhat paler veins and with the discal cell greatly enlarged, so that the gently sinuous cross-vein which forms its outer boundary lies near the posterior margin. This cross-vein does not send out a vein to the margin as in the male. Length of body 3.5 mm.; length of wings 3.75 mm.

This species was described from ten male and six female specimens kindly loaned me by Mr. A. W. Snow. They were collected at Palo Alto, Cal., March 30, 1895.

The species is an unusually striking one on account of the remarkable development of the secondary sexual characters, especially in the male. The peculiar modifications of the *fore* tarsi in the males of many Dolichopodidæ are well known, and Mr. Snow has given a good account of the singular ***hind*** tarsi of ***Platipeza calceata*** Snow and *P. ornatipes* Towns.,[*] but no Dipteron known to me has such peculiar ***middle*** tarsi as the *Rhamphomyia* just described. In the case of the Dolichopodidæ it is certain from the observations of Dahl[†] and Aldrich[‡] that the ornamental tarsi are vibrated before the females during a kind of courtship. It has been inferred that these ornaments very probably answer the same purpose as the remarkable plumes of many male birds, *e. g.* the ocellate feathers of the peacock, Argus pheasant, etc. As ***Rhamphomyia scaurissima*** probably flies in swarms with a peculiar dancing movement like other species of the genus, we may suppose that at such times the unusual tarsi of the males would be dangled conspicuously and thus attract the attention and stimulate the appetency of the inornate females.

In the female of ***Rh. scaurissima*** the great enlargement of the discal cell must be regarded as a secondary sexual character, since the moderate discal cell of the male is almost certainly of a more generalized and conservative nature. Most species of *Rhamphomyia* retain this conservative type of discal cell in both sexes, but a certain number of species present the peculiar enlargement in the female. It occurs in the European *Rh. spissirostris* Fall., *Rh. nigripes* Fab. and *Rh. serpentata* Loew, and among the North American species in Loew's *Rh. limbata, litu-*

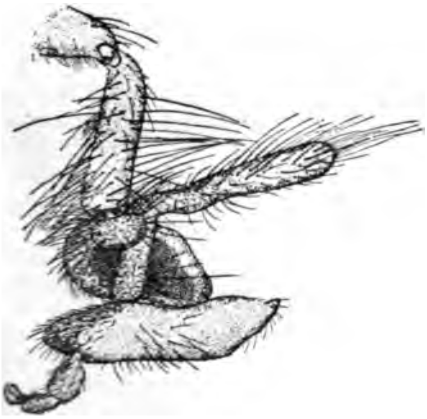


Fig. 3.—Right middle foot of *Rh. scaurissima* ♂ **seen from the inside.**

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erican Platipezidæ, Kans. Univ. Quart. vol. iii, No. 2, 1894, pp. 143-152.

e Insekten koennen Formen unterscheiden. Zool. Anzeiger 12 Jahrg. 1889, pp. 243-247.

rtship among the Flies, Am. Naturalist, vol. xxviii, 1894, pp. 35-37.

rata and *irregularis*. I have also observed it in three undescribed species from Wisconsin, Kansas and Colorado respectively. *Rh. scaurissima*, however, differs from all of these excepting some specimens of the Colorado species in lacking the vein which runs from the posterior cross-vein to the margin. This is all the more remarkable because the male has this vein well developed.

OBITUARY.

Julius Flohr, Coleopterist, died on February 8th, last, at Vera Cruz, Mexico. He was born in Hamburg, Germany, on Feb. 11, 1837, and went to Mexico in 1859.

Auguste Salle.—On the fifth of May, in Paris, there died a man whose loss will be sincerely regretted by every American entomologist who had visited that city. Speaking our language fairly well, he was always ready to devote his time in assisting those in need of an interpreter. As an entomologist of no small capacity, and with a large personal acquaintance among entomologists, he has proven of immense assistance to all who had the pleasure of his acquaintance. It is to be regretted that lack of time, owing to the demands of the press, prevent me in giving an extended notice of his services.—G. H. Horn.

Andrew S. Fuller, widely known as a writer on subjects related agriculture and horticulture, died suddenly of heart failure on Monda May 4th, at his home in Ridgewood, N. J., in the sixty-eighth year of h age. Mr. Fuller was agricultural editor of the New York *Weekly Sun* more than a quarter of a century, and at different times he had been co nected with *The Rural New Yorker*, *The Tribune*, *The Agricultur* and *American Gardening*. He was the author of several popular boo on arboriculture, small fruit culture and the propagation of plants, and h had recently completed a treatise on nut-culture, which he considered h most important work. He was an authority in some branches of entomology, an enthusiastic student and experimenter in his chosen field, an was absorbed in his favorite occupations until the very hour of his death

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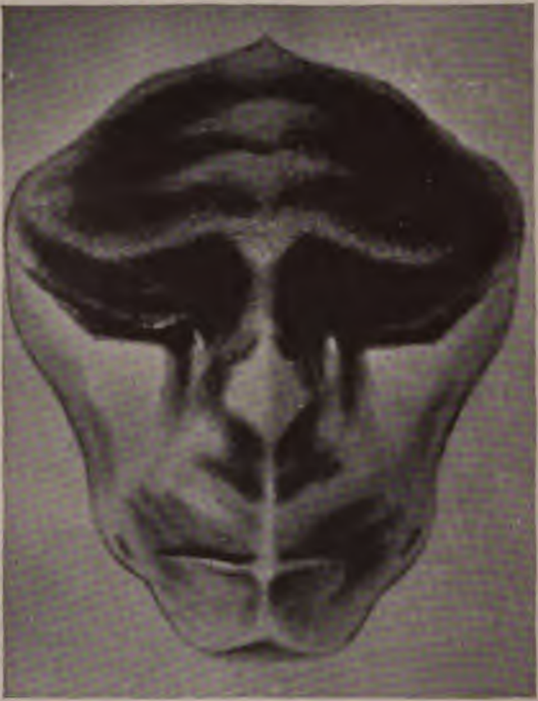
Entomological News for May was mailed April 30, 1896.



FENISECA TARQUINIUS (Chrysalis).

ENTOMOLOGICAL NEWS
AND
PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,
ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. VII. SEPTEMBER, 1896. No. 7.

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FENISECA TARQUINIUS.

Our illustration shows one aspect of the chrysalis of this interesting species. It was photographically enlarged from a drawing made by Mrs. Mary Peart for Mr. W. H. Edwards' "Butterflies of North America." The species is a carnivorous one, the larvæ feeding on plant lice.

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AROMATIC BUTTERFLIES.

By W. F. FOOTE, Most Yard, N. H.

Scudder, in his "Butterflies of New England," speaks of several species as being aromatic, but I do not think that he mentions *Debis portlandia* in this respect. This species is quite common in this immediate locality, and is the most aromatic butterfly with which I am acquainted, far exceeding *Argynnis atlantis*. I had noticed a peculiar, but not unpleasant odor upon opening my cyanide jar, but it was some time before I traced it to *portlandia*. I have frequently taken this species on the sugaring patches when making my rounds just before dusk with fresh sugar. It is an early as well as a late flyer, appearing soon after sunrise on the eastern borders of woods, and as the day advances retreating into them. In the middle of the day it may be found around patches of sunlight in thick woods, and when possible it loves to congregate around some moist place in a wood-road where the cart wheels have turned up the rich, damp mould. In one such locality I have frequently started up eight or ten usually in company with several *Satyrus alope* and *nephele*.

One afternoon while collecting along a wood-road I flushed a fine specimen of *Grapta j-album*. I gave chase, and, after a time, thinking I saw my chance, made a stroke and missed. The butterfly startled struck out a bee-line for space when, to my surprise, a large dragonfly attacked, and, after a brief struggle, overpowered it. Folding back its victim's wings this terror of the insect world settled on a pine limb about ten or twelve feet from the ground, there to suck its juices. In this object it was defeated, for a club, suddenly starting from the ground near my feet, struck the branch on which it was resting, whereupon it dropped its prey uninjured from an entomological point of view and made off. I have frequently seen smaller butterflies captured in this manner, but never before one so large and powerful.

Perhaps the most social butterfly in this locality is *Phyciodes nycteis*. I had always counted this species a great rarity until one day when I noticed a specimen while walking along a country road. I at once gave chase and captured it. A few steps farther along and another started up and before I had taken this two more were in sight. Before I captured these two I found myself surrounded on all sides by them. In a space less than a rod across I counted over forty, and perhaps there were twice that number besides in the immediate vicinity. There seemed to be no especial attraction as they were variously employed, some on the flowers of milkweed and dog-bane, some on mud, and many without apparent occupation of any kind.

Colias philodice and *Papilio turnus* frequently congregate in numbers after a rain, but in such cases evidently with a common purpose and not for the mere sake of each other's society. I once saw *Vanessa antiopa* in quantities under an apple tree in a cow-path where the apples had been crushed by passing cows.

NOTES ON EUROPEAN ENTOMOLOGICAL COLLECTIONS.

By PHILIP P. CALVERT.

VI.—VIENNA.

The Kaiserlich-Königlich. [Imperial-Royal] Naturhistorisches Hofmuseum in Vienna is probably the most magnificent building in the world devoted to the natural sciences, not only as regards its external appearance, but also by its elaborate interior decorations. Imposingly situated on the Burg Ring, it is the architectural counterpart of the Kunsthistorisches Museum on the opposite side of the Maria Theresa Platz. Dr. Franz Ritter von Hauer is Intendant, Dr. Franz Steindachner Director of the Zoological Collection, and the entomological staff embraces Dr. Friedrich Brauer Custodian (Diptera, Neuroptera), Messrs. Karl Kölbel (Arachnida, Myriapoda), Dr. L. Ganglbauer (Coleoptera, Orthoptera), F. F. Kohl (Hymenoptera), Dr. Anton Handlirsch (Hemiptera), Dr. H. Rebel (Lepidoptera).

The two lower floors are open to the public and comprise (below) the geological and mineralogical, (above) the zoological rooms; of the latter, a large and well-lighted section contains excellent systematic and biological illustrations of the Insects.

The important entomological collections are to be found on the uppermost floor in rooms between a central court and the north facade. Unfortunately the (north) light afforded by the few windows in the larger room is less than necessary. Thanks to the kindness of Dr. Handlirsch in gathering, and of his colleagues in furnishing the necessary data, the following list mentions the principal contents.

COLEOPTERA.

The Coleoptera collection comprises about 25,000 determined species in more than 300,000 specimens. Its richness consists chiefly of palæarctic, and especially of mid European, material, revised or determined by Dr. Ganglbauer in the preparation of his work on "Die Käfer von Mitteleuropa" each specimen being so labeled. The collection also contains numerous specimens of older date from the hands of [illegible] Hampe, Miller, v. Heyden, Chevrolat and others, and types of species described by Kollar, L. Redtenbacher and Ferrari. From Chaudoir's collection were purchased the Paussidæ, Rhysodidæ and Eucnemidæ. Of recent years numerous species have been described from the collection by Reitter and Ganglbauer, Abeille de Perrin, Baudi, Escherich, Fairmaire, Heller, W. Horn, Kraatz, Kuwert, Joh. Schmidt, Schilsky, Aug. Schultze, Seidlitz and others.

ORTHOPTERA.

Types of Bormans, Brunner von Wattenwyl, Herm. Krauss, Josef Redtenbacher and H. de Saussure.

LEPIDOPTERA.

Old collections of Abbé Mazzola and Podeoin; later the entire collections of Ziegler, Baron Ransonnet, Schadenberg, Dorfmeister and others were acquired. Best represented are the palæarctic Microlepidoptera, contained in the rich collections of Mann and Rebel.

Types of Hübner, Treitschke, Kollar, Zeller, Mann, Lederer, Felder, Rogenhofer, Rebel, etc.

RHYNCHOTA.

The foundation of the collection was formed by those of Natterer and Schott from Brazil, Ulrich from Europe, Mann from Southern Europe, Bilimek from Mexico, and of the "Novara" expedition.

To these were added, in 1890, the great collections of Signoret (30,000 specimens) and of Löw (16,000 specimens), so that at present there are about 15,000 species and far more than 100,000 specimens here.

The chief value of the entire collection lies in the enormous number of types of Signoret, Löw, Mayr, Förster, Stal, Reuter, Spangberg, Distant, Bergroth, Berg, Puton, Horvath, Ferrari, Lichtenstein, Lethierry, Fieber, Frauenfeld, Sahlberg, Riley, Fitch, Uhler, Amyot, Hagen, Fowler, etc.

HYMENOPTERA.

Old collections of Winthem and Megerle.

Results of the "Novara" expedition, described by de Saussure, Mayr and Sichel.

Tschek's collection (types of Ichneumonidæ).

Collections of Kohl, Handlirsch, Kolazy.

Förster's collection of Ichneumonidæ.

Types of Handlirsch, Kohl, Mayr, de Saussure, Sichel, Reinhard, Förster, Giraud, Lucas, Mocsary, Friese, Morawitz, Schmiedeknecht, Konow, Stein and Ruthe, Tschek, Schletterer.

DIPTERA.

The so-called "Hauptsammlung" arranged by Schiner with numerous old, original specimens of Meigen, Wiedemann, Schummel and others; in great part revised by Brauer.

The collection of Winthem with types of Meigen, Wiedemann, Egger, Dr. Adam Handlirsch and T. Bergenstamm.

Part of Becher's collection.

Löw's collection of Cecidomyidæ.

The chief value of the collection is the great number of original specimens of Schiner, Brauer, Löw, Bergenstamm, Egger, Meigen, Rondani, Schummel, Wiedemann and many others.

NEUROPTERA.

Collection determined and arranged by Brauer, and contains types of this author as well as some of Hagen, de Selys, McLachlan, Pictet, Karsch, etc.

A Plea for an Improvement in Entomological Pins.

By Edw. A. Klages, Crafton, Pa.

The Feldman Collecting Social, at a recent meeting, having advocated the adoption, among collectors, of a uniformity in the length of pins, the writer regarding this of much importance, has taken advantage of the long desired opportunity of presenting some facts about the pins we now use, at the same time submitting tables showing what dimensions would be best suited for the different orders.

In insects, as a general rule, increase in size means increased length, breadth and thickness, hence it follows that, if for a small specimen, a thin pin of a suitable length will be correct; that for a larger specimen, a proportionately thicker and longer pin should be used. It is needless to say that pins made with this object in view would be best suited for all orders in which the thickness of the body varies to a considerable extent, like in the Coleoptera, but in orders where this variation is not so great, such as the Lepidoptera, it may be best to use pins of a uniform length throughout, long enough, however, to answer for the largest.

The time dawns upon us when collections are of little value scientifically, in which the individual specimens have no other label except the name. Each pin supporting an insect should be long enough to also support two, or perhaps three data labels at a sufficient distance apart that they may be read without removal.

Through purchases and samples of pins received from several dealers, the writer has been enabled to carefully compare the leading makes. A rather singular thing in connection with this is that Carlsbader pins procured from different dealers vary greatly in diameter and manner of numbering. To make this apparent, the dimensions of pins procured from two dealers are appended.

Except in the case of the small sizes of the Klaeger japanned pins, in which a number are as much as 8 mm. short, the lengths given are about the average for each size. The diameters are given in even 2000ths of an inch, expressed decimally.

Schleuter Pins, black.

Nos.	Diam. in.	Increase in diam. over preceding number.	Length mm.
1	.0125	in.	35
2	.0125		"
3	.014	.0015	"
4	.0155	.0015	"
5	.018	.0025	"
6	.02	.002	"
7	.0225	.0025	"
8	.025	.0025	"
10	.027	.002	"

Carlsbader Pins, bright.

Nos.	Diam. in.	Increase in diam. over preceding number.	Length mm.
1	.0165	in.	37
2	.0185	.002	38
3	.02	.0015	37
4	.022	.002	"
5	.024	.002	"
6	.026	.002	"
7	.027	.001	"
8	.0275	.0005	41
9	.0285	.001	"
10	.0305	.002	"

Carlsbader Pins, bright; procured from another dealer.

Nos.	Diam. in.	Increase in diam. over preceding number.	Length mm.
0	.0115	in.	38
1	.012	.0005	"
2	.013	.001	37
3	.0145	.0015	38
4	.0155	.001	"
5	.0185	.003	39
6	.019	.0005	38
7	.022	.003	"
8	.025	.003	"
9	.0255	.0005	"
10	.0275	.002	"

Klaeger Pins, bright; "35 mm. length."

Nos.	Diam. in.	Increase in diam. over preceding number.	Length mm.
00	.0125	in.	33
0	.013	.0005	"
1	.014	.001	34
2	.017	.003	33
3	.0195	.0025	34
4	.023	.0035	35
5	.0265	.0035	"

Sizes larger that number 5 are similar to those of the "39 mm. length."

Klaeger Pins, bright; "39 mm. length."

Nos.	Diam. in.	Increase in diam. over preceding number.	Length mm.
00	.013	in.	38
0	.0135	.0005	"
1	.0145	.001	"
2	.017	.0025	39
3	.02	.003	"
4	.0235	.0035	"
5	.0255	.002	"
6	.03	.0045	"
7	.0305	.0005	40
8	.034	.0035	"

Klaeger Pins, japanned; "35 mm. length."

Nos.	Diam. in.	Increase in diam. over preceding number.	Length mm.
00	.013	in.	34
0	.013		"
1	.015	.002	35
2	.0165	.0015	34
3	.0195	.003	"
4	.0245	.005	35
5	.0265	.002	"
6	.0285	.002	42
7	.0285	.000	"
8	.0315	.003	"

With the exception of the Klaeger japanned pins, which are made of steel with a brass head, all of the above are made of brass-wire, either plated or japanned; the latter, if properly done, prevents corroding, which is a great advantage.

The writer's own experience goes to show that steel pins may not have as much spring as in some of the hard brass pins, but they are superior in stiffness, and not so liable to clinch on the point.

As a perusal of the above tables will show considerable variability and uncertainty in the individual grades, and inconsistency in the gradation, I would suggest as a standard the following table of dimensions:

Nos.	Diam. in.	Increase in diam. over preceding number.	Length mm.	Increase in length over preceding number.
1	.013	in.	35.	mm.
2	.015	.002	35.5	0.5
3	.0175	.0025	36.5	1.
4	.0205	.003	38.	1.5
5	.024	.0035	40.	2.
6	.028	.004	42.5	2.5
7	.0325	.0045	45.5	3.
8	.0375	.005	49.	3.5
9	.043	.0055	53.	4.

A uniform length of 38 mm. is suggested for such orders in which the body does not vary to a great extent. In this case the diameters should be the same as in numbers 2, 3, 4, 5, 6 and 7 in the above table.

It is to be hoped that entomologists will become aroused to the advisability of adopting a properly graded standard, and using no other. Manufacturers would no doubt undertake to supply the demand if entomologists can be induced to unite in this movement.

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CARNIVOROUS LARVA OF MELANOTUS COMMUNIS.

By Frederic Ormonde.

Probably one of the most exhaustive series of experiments relative to the economy, life-history, etc., of the Elateridæ ever made in this or any other country, was that of Professors Comstock and Slingerland, of the Cornell Experiment Station, the results of which were given to the public in Bulletin 33 of that station. Yet the only occasion suggestive of any carnivorous tendency noticed by them was a large larva of *Asaphes decoloratus* Say with a smaller one in its jaws,* which they suggest as being in all probability, accidental.

The special experiments, with the object of ascertaining any carnivorous habits, were all with negative results. They placed larvæ of *Asaphes decoloratus* and earth-worms together in a breeding-jar, but no such tendencies were seen. Experiments with *Melanotus communis* Gyl. likewise failed, as did those made with *Drasterius elegans* Fab.† The result of my own observations on the subject are as follows: Early in the season I found a number of the larvæ of several species among the decaying matter and refuse in the base of a hollow oak which I took together with an amount of the substance in which they were found. Upon my return home, not having any idea of their being devoured by one another, they were all placed in one breeding-cage. My surprise was very great, therefore, upon examining them the next morning to find one of the *Melanotus communis* gorging itself upon one of *Ludius* sp. The body had been severed at the third segment and the canabalistic individual was found with head and thoracic segments submerged within the body of its victim. These I immediately placed in alcohol as proof positive for future reference. I then placed in a separate cage another *M. communis* larva with one of a species unknown to me. On looking at these the following day all that remained of the undetermined species was the head, thoracic appendages, with a few fragments of the other segments. Having found, also, the larvæ of a species of *Uloma infirmis* Mels., I believe, with these in the same location I wished to see what would be the result of placing them together in the breeding-cage. As I expected, it was the same as before, and since then the carnivorous species have been in separate jars along with the material in which they were found. Several species of this family, in the larval form, are said to be carnivorous.

Dr. Riley reared *Hemirhipis fascicularis* Fab. from the larvæ preying on them of *Cyllene pictus* Drury; *Elater luctuosus* Lec. from larvæ that fed on those of *Dendroides canadensis* Latr. and *Cucujus clavipes* Fab.; *Melanotus communis* fed on the larvæ of

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* Bulletin 33, Cornell Experiment Station, page 259.

† Bulletin 33, Cornell Experiment Station, pages 259, 263, 268.

Chrysobothris femorata Fab.* He has also found the larvæ of *Drasterias amabilis* Lec. preying on locust eggs.†

It will be observed that Dr. Riley's experiments were made with larvæ of other families, as the food, whilst with one exception, mine have been confined to the same as the devourer. The larval stages of this family present an ample field for study as at present comparatively little is known concerning them, a very grievous fact when their economic importance is taken into consideration.

For those who may wish to enter into a study of this family, I would suggest a close perusal of the before-mentioned Bulletin of the Cornell Station as well as the table of species to be found in the Eighteenth Report of Prof. S. A. Forbes, together with the synoptic tables of the family by Drs. LeConte and Horn.

RANK IN THE HETEROPTERA.—The common view that the aquatic bugs are of lower rank than the Scutelleridæ, etc. (see H. E. Summers, p. 81, Bull. Tenn. Exper. Station, July, 1891, vol. iv, No. 3), is not evident from a study of their characters. In fact, the reverse of the present order of succession of the families is the true gradation from the lower to the higher. Thus, the large head of *Corisa* and *Galgula*, the modified antennæ, the reduced number of joints in the tarsi and beak, as well as in the antennæ, the reduced size of the membrane of the hemelytra and the shorter abdomen, all indicate the high specialization and cephalization of the families hitherto considered the lowest. The true succession of families, from the lower to the higher, is Coreidæ, Nabidæ, Reduviidæ, Phymatidæ, Scutelleridæ, Nepidæ, Notonectidæ. The large scutellum of the water bugs and the position of the antennæ show their relationship to the Scutelleridæ, the high rank of both being evident from the small number of segments in the abdomen (the above was penned several years ago before the publication of Comstock's "Manual," where, p. 128, recognition is made of the high rank of the Scutelleridæ and Hydrocorisa, but without giving characters).—W. H. PATTON.

THE collection of native and foreign Lepidoptera made by the late Rev. J. G. Morris, of Baltimore, Md., is for sale. According to Prof. Uhler the collection is in very excellent condition. Many of the specimens were collected and mounted by Dr. Morris, who, at the time of his death, was probably the oldest entomologist in the United States. It would be a pity for this collection to go to destruction for want of care, and it should fall into the hands of some individual or institution where it would receive the care it merits.

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* First Report U. S. Entomological Commission, page 304.

† American Entomologist, vol. iii, page 247.

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., SEPTEMBER, 1896.

THE meeting of the entomologists of New York, Philadelphia, Brooklyn and Newark on the fourth of July at the latter city was an interesting one in many ways. The people gathered together had in common a love for natural science, but differed in many other respects. Many trades and a number of professions were represented. The greater number were either German, or German descent, and if it were not for the interest taken in entomology by these people, who evidently inherited this taste from ancestors who derived their knowledge from the wisdom displayed in teaching German school children natural history, we would have little entomology in America. We hope to see the time when such studies will be taught in our schools. It was Gladstone who said the present fault of our school system is the lack of teaching in natural history.

WHILE not an author, the late Julius Flohr has been of assistance in aiding the accumulation of material for others, notably for the authors of the "Biologia." In his journeys between Mexico and England he never failed to visit Philadelphia to see the fine specimen of *Heterosternus buprestoides* in our cabinet which seemed to have an irresistible attraction. —G. H. HORN.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

The Army Worm, *Leucania unipuncta*, has formed the subject of many newspaper paragraphs in the Eastern States during the present Summer. It has appeared in destructive numbers in parts of New York, Pennsylvania, Massachusetts, New Jersey and other States, but was most serious in the two first named. Dr. Lintner writes that he has "record of it in 38 of the 56 counties, and it is probable that only the extreme northern counties were exempt from it." I have received word of its presence from several counties of eastern and central Pennsylvania, and newspaper accounts speak of it from more western points. In New Jersey it was reported from the more southern counties as early as May 26th as injurious to grain and grass; but it was exceedingly local, and after the middle of June nothing more was heard of it from the points first infested. Its injuries were comparatively slight, though, of course, severe to the farmers directly concerned. About the middle of July there was a very local outbreak in Atlantic County, but the principal complaints came during the latter part of June and early in July, from two or three of the northern counties. *Leucania unipuncta* is always a common insect throughout the eastern and central United States and seems, under ordinary conditions, to be very evenly distributed. The interesting feature in the New Jersey part of the outbreak is its extremely local character. A field here and there proves to be badly infested, while all intervening lands are clean. Near Egg Harbor City a single field only was attacked, though all about were others in much the same condition as to situation, character of crop and nature of rotation employed. So, also, I was surprised to note the differences in the amount of parasitic infestation in the specimens sent me. In some sendings every caterpillar had eggs of Tachinid flies attached to it; in others a small proportion or none at all were infested. The climatic conditions in New Jersey during the early Spring of 1896 were those accounted most favorable to this insect, *i. e.*, dry and warm. As to the remedial measures adopted, they were generally of the most perfunctory and unsatisfactory character. Some simply sat and wailed, others tried insecticides indiscriminately, a few gathered the crop as it was for fodder and somewhat under-ripe, and only in occasional instances was destruction of the infested field resorted to. Furrowing was resorted to in some cases, and in one instance a ditch was dug on low ground, until water stood in it and this effectually confined the creatures to their original point of infestation.

Mosquitoes were also the subject of much newspaper comment in the Metropolitan press, and in some places near New York they were certainly excessively numerous. Of course this could be readily accounted for by the numerous heavy rains, keeping ditches, puddles and swamps full, and by the hot weather favoring the development of the low forms of animal and vegetable life upon which the mosquito larvæ feed. It is interesting to note that mosquitoes are becoming much more common in Southern California as one of the results of irrigation. Ditches, sluggish or partly choked, or little basins formed here and there, afford excellent places for them to breed. Prof. A. J. Cook has made the interesting observation at Clermont, Cal., that mosquito larvæ are able to stand considerable drying up without injury, and when, after a dry period the water supply is renewed, they resume their activity.

New Jersey has an enviable reputation for the quality of its mosquitoes, but I believe that the foreign product, on the plains of Manitoba, is superior in size, and at least equal in numbers and blood-thirsty disposition.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

WHILE collecting on the Humber Plains on the 11th of June with my friend, Mr. C. H. Tyers, we took a number of specimens of *Colias cæsonia*. This is the first time it has been taken in this locality and has only been once recorded from Ontario.—C. T. Hills, 18 Sussex Ave., Toronto, Canada.

THE Fifth Annual Excursion of the Entomologists of New York, Brooklyn, Newark and Philadelphia was held near Newark, N. J., on July 4, 1896, and was successful in every way. In spite of the disagreeable weather of the early morning a large party participated, and every one seemed to have thoroughly enjoyed the outing, which may aptly be called a social gathering. The following persons were present:—NEWARK: Bischoff, Stortz, Weidt, Reinicker, Seib, Betz, Brehme, Kircher, Angelman, Weier, Deitze. NEW YORK: Palm, Merkel, Dietz, Ottolengui, Beyer, Beutenmüller, Love, Schaeffer, Groth, Bennett, Soltau, Walker (Jamaica, L. I.), Fischer (Buffalo), Stéffens (Shelton, Conn.). PHILA-

DELPHIA: Boerner, Schmitz, Skinner, Gerhard, Reinicke, Laurent, Johnson, H. Wenzel, E. Wenzel, Griffith, A. Hoyer, F. Hoyer, Trescher, Nell, Schneider, Castle, Fox, Mengel (Reading, Pa.).—F.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be **limited to twenty-five** for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. **Please put date of capture and exact locality on each specimen.** Before sending insects for identificaticn, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the anatomy of insects, however, whether relating to American or exotic species will be recorded.

1. Occasional Papers of the Natural History Society of Wisconsin, vol. iii.—Spiders of the family Attidæ from Central America and Mexico, G. W. and E. G. Peckham.

2. ZOOLOGISCHER ANZEIGER, No. 502.—On the secondary spiracles on the legs of Opilionidæ, J. C. C. Loman.

3. ANNALES DES SCIENCES NATURELLES, Zool. et Paleon. 8e serie, i, 4-6.—Study on locusts, J. H. Fabre.

4. JOURNAL OF THE CINCINNATI SOCIETY OF NATURAL HISTORY, xviii, Nos. 3, 4.—Catalogue of the Odonata of Ohio, pt. ii, D. S. Kellicott.

5. PROCEEDINGS OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, 1896, pt. 1.—Report on extermination of tussock moth, H. Skinner and W. J. Fox.

6. VERHANDLUNGEN DES VEREINS FUR NATURWISSENSCHAFTLICHE UNTERHALTUNG ZU HAMBURG, 1894-1895.—Contribution to the knowledge of the Lepidopterous fauna of Rio de Janeiro, V. von Bönninghausen.

7. THE BOTANICAL GAZETTE, May, 1896.—Flowers and insects, xvi, C. Robertson.

8. TERMESZETRAJZI FUZETEK, BUDAPEST, xix, 2.—Contributions to a knowledge of the Hungarian Braconidæ, V. Szepligeti. A new enemy of the fir of the Class Insecta, G. Horvath.

9. BOLLETINO DEI MUSEI DI ZOOLOGIA . . . DELLA R. UNIVERSITA DI TORINO, vol. xi, No. 229.—Formicidæ collected by Dr. E. Festa in the vicinity of the Gulf of Darien, C. Emery.——Ibid. No. 230.—Some new ants of the genus *Azteca* Forel and biological notes, ibid.——Ibid. No. 232.—Orthoptera collected in Darien by Dr. E. Festa, i, A. Griffin.——Ibid. No. 234.—On an anomalous *Pristes tuberosus* collected in Darien by Dr. E. Festa, ibid.——Ibid. No. 239.—Travels of Dr. A. Borelli in the Argentine Republic and Uruguay, Odonata, R. Martin.——Ibid. No. 240.—On the Odonata collected by Dr. E. Festa in Darien and Cuenca, ibid.

10. ARCHIV FUR ENTWICKELUNGSMECHANIK DER ORGANISMEN, iii, 2.—An antenniform extra appendage in *Dilophus tibialis* Loew, W. M. Wheeler.

11. ARCHIVES DE ZOOLOGIE EXPERIMENTALE ET GENERALE, 1896, No. 1.—The production and evolution of the social wasps, P. Marchal.

12. PROCEEDINGS OF THE ZOOLOGICAL SOCIETY OF LONDON, 1895, pt. 4.—Report on the parasitic Hymenoptera of the island of Grenada, comprising the families Cynipidæ, Ichneumonidæ, Braconidæ and Proctotrupidæ, W. H. Ashmead, On the color variations of a beetle of the family Chrysomelidæ, statistically examined, W. Bateson. On the Orthoptera of the Sandwich Islands, B. v. Wattenwyl. On the classification of the Schœnobiinæ and Crambinæ, two subfamilies of moths, of the family Pyralidæ, G. F. Hampson.

13. PROCEEDINGS OF THE UNITED STATES NATIONAL MUSEUM, xviii [Extracts].—List of the Lepidoptera collected in Eastern Africa by Dr. W. L. Abbott, . . . W. J. Holland. Revision of the North American Empidæ—a family of two-winged insects, D. W. Coquillett.

14. PSYCHE, a journal of entomology, June, 1896.—*Neelus murinus*, representing a new thysanuran family, J. W. Folsom. New species of *Prosapis* (cont.), T. D. A. Cockerell. List of Mt. Washington Coleoptera, F. C. Bowditch.

15. MICHIGAN STATE AGRICULTURAL COLLEGE EXPERIMENT STATION, Bulletin No. 132.—Some injurious insects: climbing cutworms; control of the common granary insects; carpet beetles and clothes moth, G. C. Davis.

16. THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION, viii, 2.—The relationship of the lower Lepidoptera with Trichoptera, J. W. Tutt.

17. UNITED STATES DEPARTMENT OF AGRICULTURE (Division of Entomology), Technical Series, No. 4.—Some Mexican and Japanese injurious insects liable to be introduced into the United States: Introduction, L. O. Howard; Report of a trip to investigate insects of economic importance in Mexico, C. H. T. Townsend; Insects injurious to stored cereal and other products in Mexico, F. H. Chittenden; Notes and descriptions

of new Coccidæ collected in Mexico by Professor Townsend; A list of the scale insects found upon plants entering the port of San Francisco, A. Craw; Some Coccidæ found by Mr. Craw in the course of his quarantine work at San Francisco, T. D. A. Cockerell. Some new species of Japanese Coccidæ collected by O. Takahashi, ibid.——Ibid. No. 3.—Revision of the Nematinæ of North America, C. L. Marlatt.

18. ENTOMOLOGISCHE NACHRICHTEN, 1896, H. 9.—The Hollandidæ or W. J. Holland's Ethiopian Arbelidæ, F. Karsch.——Ibid. H. 11.—The mouth-parts of Rhynchota (Homo-Heteroptera), R. Heymons.

19. ILLUSTRIERTE WOCHENSCHRIFT FUR ENTOMOLOGIE, i, 2.—On Coccinellidæ and their varieties, A. Reichert. A new system of Muscidæ . . . (cont.), E. Girschner.

20. VERHANDLUNGEN DES NATURFORSCHENDEN VEREINES IN BRUNN, Bd. xxxiii.—Revision of the coleopterous genus *Danacæa* Laporte of the palaearctic fauna, J. Prochazka. Analytical table of the bark-beetles (Scolytidæ) of Europe and surrounding countries, E. Reitter.

21. THE CANADIAN ENTOMOLOGIST, June, 1896.—The larger species of *Argynnis* and the mystery of their life-history, H. H. Lyman. *Trychosis tunicula-rubra* n. sp., T. W. Fyles. The Coleoptera of Canada, xvi, H. F. Wickham. Five new bees of the genus *Calliopsis*, T. D. A. Cockerell. New Hampshire Hesperidæ, W. F. Fiske. On two interesting new genera of scale insect parasites, L. O. Howard. The mutillid genus *Chyphotes*, T. D. A. Cockerell. A moth out of place, J. A. Moffat. ——Ibid. July.—The Coleoptera of Canada, xviii, H. F. Wickham. Notes on some moths from the collection of Mr. A. Bolter, H. G. Dyar. Note on *Trigonogenius farctus*, E. A. Schwarz. The smaller bees of the genus *Andrena* found in New Mexico, T. D. A. Cockerell. *Lepyrus alternans* and *capucinus*, *Lixus fossus*, *Cremastochilus harrisii* and *Polypleuris nitidus*, J. Hamilton. Two new Hesperids, H. Skinner. Notes: *Colias cæsonia; Papilio ajax.*

22. THE ENTOMOLOGIST, June, 1896.—Fungi parasite on butterflies, J. C. Rickard. New experiments on the seasonal dimorphism of Lepidoptera (cont.), A. Weismann.

23. THE ENTOMOLOGIST'S MONTHLY MAGAZINE, June, 1896.—An annotated revision of the British Chrysididæ (concluded), F. D. Morice. Supplement to "A Synopsis of British Psychodidæ," A. E. Eaton. On the structure and development of the lepidopterous wing, D. Sharp.

24. The Gypsy Moth, *Porthetria dispar* (Linn.). A report on the work of destroying the insect in the commonwealth of Massachusetts . . . , by Edward H. Forbush and Charles H. Fernald, 8vo, Boston, 1896.

25. Nineteenth Report of the State Entomologist on the noxious and beneficial insects of the State of Illinois, S. A. Forbes (relates chiefly to experiments for the extermination of the chinch bug).

26. Tenth Report of the New York State Entomologist for 1894 [Extract].—The scorpion flies, E. P. Felt.

27. ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, xl, 5.—The ants of tropical America, A. Forel. Analytical key of the genera of the family Formicidæ for the determination of the neuters, C. Emery Revision of the species of the genus *Ulocerus* Dalman, A. Senna.——Ibid. xl, 6.—Descriptions of new genera and species of Phytophagous Coleoptera obtained by Mr. Andrews in India, M. Jacoby.

28. BIHANG TILL KONGL. SVENSKA VETENSKAPS-AKADEMIENS HANDLINGAR, xx, 4.—Researches on Arachnida from Java and adjacent places, . . . with descriptions of new South Asiatic and South American species, T. Thorell. The Myriapod fauna of Cameroons, C. O. von Porat.

29. BULLETIN DE LA SOCIETE ZOOLOGIQUE DE FRANCE, xx, 3.—Descriptions of some Lower Californian spiders forming part of the collections of Dr. Geo. Marx, E. Simon.

30. ANNALES AND MAGAZINE OF NATURAL HISTORY, June, 1896.—On some Odonata of the subfamily Aeschnina, R. McLachlan.

31. NATURAL SCIENCE. London, June, 1896.—The meaning of metamorphosis, A. Hyatt and J. M. Arms.

32. JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY, June, 1896.—New species of Heterocera, W. Schaus. The phosphorescent organs of insects, A. S. Packard. The probable origin and diffusion of North American species of the genus *Diabrotica*, ii, F. M. Webster. On the probable origin of the Pericopidæ: *Composia fidelissima* H.-S., H. G. Dyar. The larva of *Syntomeida epilais* Walk., ibid. Food-habits of North American Cerambycidæ, W. Beutenmüller. Note on the geographical distribution and mimicry of *Apatela*, A. R. Grote. Correction of the type of *Agronoma* and note on *Laspeyria*, ibid. Note on *Encæmia crassinervella* Zell. (*Mieza igninix* Walk.), A. T. Slosson. A description of the larva found by Mrs. Slosson, H. G. Dyar. New Californian spiders, N. Banks. Note on the head setæ of lepidopterous larvæ, . . . H. G. Dyar. Desiderata of North American Notodontidæ, A. S. Packard.

33. BIOLOGISCHES CENTRALBLATT, xvi, Nr. 11.—By what means do flowers attract insects, F. Plateau.

34. BULLEPTINO DELLA SOCIETA ENTOMOLOGICA ITALIANA, xxvii, 3, 4.—Hymenopterological note (note 3), G. Gribodo.

35. TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON, 1896, pt. 2.—Notes on pupæ: *Orneodes*, *Epermenia*, *Chrysocorys* and *Pterophorus*, T. A. Chapman. Descriptions of new genera and species of Coleoptera from South Africa, . . . L. Péringuey. Descriptions of new Scolytidæ from the Indo-Malayan and Austro-Malayan regions, W. F. H. Blandford. Notes on *Dyscritina longisetosa* Westw., E. E. Green. On the courtship of certain European Acridiidæ, E. P. Poulton.

36. MEMOIRES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, T. iii. —A list of Tenebrionidæ supplementary to the "Munich" Catalogue, G. C. Champion.——Ibid. T. iv.—Revision of the Dytiscidæ and Gyrinidæ of Africa, Madagascar and neighboring islands, M. Régimbart.——Ibid. T. v.—Ichneumonidæ of Africa, J. Tosquinet.

37. BERLINER ENTOMOLOGISCHE ZEITSCHRIFT, xli, 1.—New contribution to the knowledge of the group Epidosis, J. J. Kieffer. Enumeration of the Histeridæ collected in Brazil by Prof. F. Sahlberg, J. Schmidt.

38. JOURNAL OF THE TRINIDAD FIELD NATURALISTS' CLUB, ii, 12.— Two Embidæ from Trinidad, H. de Saussure. On a small collection of Coccidæ from the island of Grenada, T. D. A. Cockerell.

39. ZOOLOGISCHER ANZEIGER, No. 505.—The postembryonal development of the oviducts and their accessory glands in the female sexual apparatus of *Bombyx mori*, E. Verson.

40. ARCHIV FUR MIKROSKOPISCHE ANATOMIE UND ENTWICKELUNGSGESCHICHTE, xlvii, 3.—On the structure of the nuclei in the spinning-glands of larvæ, E. Korschelt. On cell-membrane in the spinning-glands of larvæ, ibid.

41. THE AMERICAN NATURALIST, July, 1896.—The asymmetry of the mouth-parts of Thysanoptera. A new African Dilopod related to *Polyxenus*, O. F. Cook.

42. MORPHOLÓGISCHES JAHRBUCH, xxiv, 1.—On the morphology of the abdominal appendages in insects, R. Heymons.

43. BULLETIN OF THE AMERICAN MUSEUM OF NATURAL HISTORY, viii [Extract].—Critical review of the Sesiidæ found in America, North of Mexico, W. Beutenmüller.

44. Elementarcurs der Zootomie in fünfzehn Vorlesungen, B. Hatschek und C. J. Cori, 8vo, Jena, 1896 (the twelfth lecture is devoted to the anatomy of *Periplaneta orientalis*, and is accompanied by two fine plates; lecture thirteen on *Hydrophilus piceus* L.).

45. Yearbook of the United States Department of Agriculture, 1895.— The shade-tree insect problem in the Eastern United States, L. O. Howard. The principal insect enemies of the grape, C. L. Marlatt. Preparation and use of insecticides, Anonymous.

46. TRANSACTIONS OF THE ACADEMY OF SCIENCE OF ST. LOUIS, vii, 6. —Flowers and insects, C. Robertson.

47. ZEITSCHRIFT FUR WISSENSCHAFTLICHE ZOOLOGIE, lxi, 3.—To a knowledge of the epidermal sense organs and the sensory nervous system of the Arthropoda, O. vom Rath.

48. Bulletin of the United States Geographical Survey, No. 124.—Revision of the American fossil cockroaches, . . . S. H. Scudder.

49. PROCEEDINGS OF THE LINNEAN SOCIETY OF NEW SOUTH WALES, x, 3.—Australian Termitidæ, pt. i, W. Froggatt.

50. DEUTSCHE ENTOMOLOGISCHE ZEITSCHRIFT, 1896, i.—Correct determination of the position of some genera of Cassidæ, J. Weise. Description of new species of *Cassida* and synonymical remarks, ibid. *Hadronigidius*, new genus of Lucanidæ from Africa, G. Kraatz. New Cetomidæ from East Africa, . . . ibid. Buprestidæ from the Zanzibar region . . . , ibid. New species of Elateridæ, O. Schwarz. Javanese enemies of the sugar-cane of the family Rhynchota, G. Bredden. Contribution to the knowledge of the fauna of German East Africa, J. Faust. *Cyrtocerus*, new East African genus of the Prionidæ, G. Kraatz. *Laberoschema*, new genus Cyrtophagidæ, E. Reitter. Review of the genera and species of Coleoptera allied to *Penthicus* Feld., known to me, ibid. Description of a new genus of weevil from German East Africa, F. Hartmann.

51. ANNALS AND MAGAZINE OF NATURAL HISTORY, July, 1896.—Descriptions of some new genera and species of Heterocera from Central and Tropical South America, H. Druce. On some new Pierine butterflies from Columbia, A. G. Butler. On a new generic distinction between the scorpions of the genera *Scorpio* and *Palamnæus*, R. I. Pocock. The bees of the genus *Andrena* found in New Mexico, T. D. A. Cockerell. Observations on some Buprestidæ from the West Indies and other localities, C. O. Waterhouse. New species of Pyralidæ from the Khasia Hills, W. Warren.

52. MITTHEILUNGEN AUS DEM ROMER MUSEUM, Nr. 6.--The Saturniidæ, A. R. Grote.

53. ANNALS OF THE NEW YORK ACADEMY OF SCIENCE, ix, 1-3.—The Craspedosomatidæ of North America, O. F. Cook and G. N. Collins.

54. BULLETIN OF THE MUSEUM OF COMPARATIVE ZOOLOGY, xxix, 5.—The development of the wing scales and their pigment in butterflies and moths, A. G. Mayer.

55. HORÆ SOCIETATIS ENTOMOLOGICÆ ROSSICÆ, xxix, 1, 2.—Contributions to a monograph of the Coniferæ lice i, N. Cholodkovsky. Entomological miscellany; On the question of the spinning-glands of Tenthredinid larvæ, V. Pickel; To a knowledge of the glandular hair of the nun-moth (*Oeneria monacha* L.), I. Ingenitzky; On the squirting apparatus of the Cimbicid larvæ, N. Cholodkovsky.

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Doings of Societies.

PHILADELPHIA, June 30, 1896.

A stated meeting of the Feldman Collecting Social was held at the residence of Mr. H. W. Wenzel, 1509 S. 13th Street.

Members present: Messrs. Bland, Boerner, Castle, Johnson, E. Wenzel, Trescher, Seiss, Laurent, Hoyer, Fox, H. W. Wenzel and Schmitz. Honorary members: Drs. Geo. H. Horn and Henry Skinner. Visitor: Mr. Frank Hoyer. Meeting called to order at 8.45 P.M. President Bland presiding. For the committee on 4th of July meeting Mr. Fox, in the absence of the chairman, reported that circulars had been forwarded to the different societies, and that the returns seemed favorable for a large meeting. On motion the committee was continued.

Mr. H. W. Wenzel read a communication received from Prof. Smith, dated Marysville, California, June 2d, after which he exhibited an interesting species of Lampyrid, *Lamprohiza reticulata*, taken in the mountains of western North Carolina. Both sexes were shown, the females being wingless and of a whitish color. Mr. Wenzel said he would make further remarks on some of the species captured later on, as he had not looked over the material carefully which he had taken on his recent southern trip.

Dr. Horn exhibited his collection of Oedemeridæ, which has cost him so much trouble in the past year, stating that the mimicry of species caused considerable difficulty in determining their genera.

Mr. Laurent exhibited a representative collection of Lepidoptera collected by Dr. Castle and himself in Florida; also the gopher and gopher insects which they had excavated.

Mr. Frank Hoyer was unanimously elected a member of the Social.

No further business being presented the meeting adjourned to the annex at 10.30 P.M.

THEO. H. SCHMITZ, *Secretary.*

American Entomological Society.

PROCEEDINGS OF MEETINGS.

APRIL 23, 1896.

A regular meeting of the American Entomological Society was held this evening, President Dr. George H. Horn in the chair. The Publication Committee reported in favor of publishing the following papers in the "Transactions" of the Society: "On the

Species of Bembidium of America North of Mexico," by Roland Hayward; "A Classification of the Geometrina of N. America, with Descriptions of New Species," by Dr. G. D. Hulst; "The Lamiinæ of North America," by Chas. W. Leng, with "Notes and Descriptions," by John Hamilton, M.D.; "Revision of the Genera and Species of Ceutorhynchini inhabiting North America," by W. G. Dietz, M.D. Mr. Hayward made some remarks upon the species of Bembidium contained in the paper presented for publication this evening. Dr. Horn complimented Mr. Hayward upon the work done in the preparation of the paper. Dr. Griffith said he had been to Atlantic City for a week, and for the early part of the season had done considerable collecting, getting a number of Cicindela, Scarabæides and Longicorns. At Longport he had taken about thirty specimens of Hemiptera. Dr. Horn remarked that he had often noticed that in the early warm days of Spring it was usual to find flies in large numbers, but that during the last warm spell he had seen none. Mr. Seiss said that on April 14th he had taken from the stomach of a blue-winged teal some specimens of *Donacia æqualis* and *Hydrovatus pustulatus*. Mr. H. W. Wenzel and Mr. Lancaster Thomas were elected members of the Society.

JUNE 25, 1896.

Meeting held this evening Dr. Horn, President, in the chair. The Publication Committee reported in favor of publishing the following papers in the "Transactions" of the Society: "New Neuropteroid Insects," by Nathan Banks; "The Bees of the Genus Halictus found in New Mexico," by T. D. A. Cockerell. Dr. Horn addressed the meeting upon the subject of the spiracles of Coleopterous insects. He said they had not been used in classification excepting by Burmeister in the Melolonthidæ. In the Laparosticts they were placed in the membrane between the ventral and dorsal segments of the abdomen. In the Pleurosticts they are gradually divergent in the Melolonthidæ and suddenly divergent in the second group. In the Laparosticts it is claimed by some that they all have a membranous ligulæ, while the Pleurosticts have a corneous ligulæ, with which conclusions he did not agree, as there are some species of Lamelicorns which do not meet the expectations from such claims. Mr. Wm. J. Fox was elected Librarian of the Society.

JAMES H. RIDINGS,
Recording Secretary.

The following papers were read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS:

A New Species of Tropidia (Syrphidæ) and Note on the Generic Position of Melanostoma rufipes Williston.

By W. D. HUNTER.
(Assistant in Entomology, University of Nebraska.)

NORTH AMERICAN SPECIES OF TROPIDIA.

1.—Antennæ black, or nearly so, posterior coxæ of male without spur, dorsum without pollinose markings, scutellum without yellow border; third antennal joint of moderate size. Abdomen with two small reddish spots on anterior corners of the second and third segments; venter largely red. Legs black. **nigricornis** n. sp.
Antennæ yellow, or at most reddish brown . . . . 2.
2.—Posterior femora of male at base with a strong process, four anterior tibiæ yellow. Abdomen with two interrupted bands; antennæ light ochraceous, dorsum shining blackish bronze . . **mamillata.**
Posterior femora of male without such basal process . . . . . 3.
3.—Antennæ very large, posterior coxæ of male with large obtuse spur. **calcarata.**
Antennæ moderate, not reaching the epistoma . . . . 4.
4.—Scutellum with yellow margin, face covered with pollen; middle and anterior tibiæ yellow; dorsum of thorax with median pollinose markings . . . . **quadrata.**
Scutellum without yellow border, face shining black. Legs black; dorsum without median pollinose markings . . . . . **incana.**

Tropidia nigricornis n. sp.—Front and vertex shining black with short yellow pile, longer on the vertex; frontal triangle in male silvery sericeous, face in both sexes opaque, less densely sericeous. Face indistinctly obliquely wrinkled, sharply carinate, in male vertical below the antennæ, in female distinctly concave; antennæ black in the female, tinged with reddish in the male; third joint of moderate size, subquadrate, usually obliquely truncate on the outer side; dorsum of the thorax blackish bronze, shining, without pollinose markings, covered with short reddish yellow pile; pleuræ shining, sparsely grayish pilose; scutellum shining black. Abdomen in the female shining black, with a pair of small reddish spots on the anterior corners of the second and third segments; posterior margins of the segments except the first, whitish; last segment short, whitish pilose. In male as in female, except that more or less of segments one, two and three, are opaque. Legs black; middle and anterior knees yellow, all the tarsi slightly tinged with brownish; posterior femora with the usual process, coxæ without spur. Wings hyaline, projecting beyond the tip of the abdomen; venter, except part of first and last segments, bright blood-red (in unfaded specimens). Length 8-8.5mm.

Described from thirteen female and five male specimens taken at Moscow, Idaho, in May, by Prof. Aldrich.

This species is quite distinct from the described species of *Tropidia*, which are included below in the dark antennæ and legs and the absence of the coxal spurs. The pile of the thorax and scutellum indistinctly longer than in *T. incana* Twnds. according to Mr. Snow, who has kindly compared them for me.

1. *nigricornis* n. sp.
2. *mamillata* Loew, Centur. i, 68, 1861.
3. *calcarata* Will., Synopsis, 208, 1886.
4. *quadrata* Say, Amer. Ent. i, viii, 1824; ibid. Comp. Wrts. Lec. i, 14.
5. *incana* Townsend, Trans. Am. Ent. Soc. 1895, 52.
6. *albistylum* Macquart, Dipt. Exot. 2e, Suppl. 60, i, tab. 2, fig. 10, Will. Syn. 207; ibid. Ent. News, 1892, 146.

Melanostoma rufipes Will.

The generic position of this species has been doubtful owing to the fact that only the female has been described, and that the only character separating *Melanostoma* from *Platychirus* lies in the anterior tarsi of the male. Dr. Williston says, "Until the male of this species is known its position is somewhat doubtful. Its relationship to *Chilosia* is very strong, but the distinctly banded abdomen would seem to remove it from that genus; possibly it is a *Platychirus*."

I have had the opportunity of examining specimens from the collection of Prof. Aldrich that remove all doubt on this point. The anterior tarsi of the male are not at all dilated, hence Dr. Williston's provisional location of this species in *Melanostoma* is the correct disposition of it. It cannot be a *Chilosia* as there are no traces of the lateral facial sutures that characterize that genus.

These specimens show several differences from the description in color; in fact none of them agrees exactly, but I am unable to discover any substantial structural differences, and hence conclude that this species like the others of the genus is very variable.

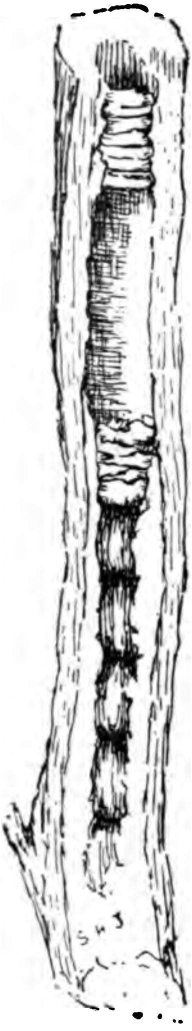
———o———

ALCIDAMEA PRODUCTA Cress. AND ITS PARASITES.

By A. Davidson, M.D., Los Angeles, Cal.

This is one of the more common bees of this district, and may be found over a wide range of territory, nesting freely wherever convenient sites are to be found from the plains around Los Angeles to at least 5000 feet altitude in the Tehachapi Mountains.

It prefers as a nesting site the broken twigs of the elder tree or fennel plant, burrowing from the end in the medium sized branches. The burrow when completed seldom extends more than six or seven inches into the branch, and is usually four lines wide. In the typical nest the cells as shown in the illustration are crowded together at the bottom, while on the top of and usually contiguous to the outermost cell are alternating layers of pith and clay, the former evidently gathered from the sides of the burrow above, as that part is wider than the section occupied by the cells. Near the entrance to the burrow the opening is further obstructed by a series of clay partitions with the intervals between filled with pith as in the other. The partitions are somewhat peculiarly constructed, both the upper and lower being fashioned on the same plan. The lower usually has a layer of pith next the cell of a thickness varying from one-half to one-eighth of an inch, on top of which is a disc of clay one-half line thick, then one-eighth of an inch of pith and another disc, etc. The outer defence is wholly constructed of alternating layers of clay discs and pith differing only from the deeper one in being begun and finished with a clay disc. The cells measuring 6 by 3 lines are closely packed together at the bottom of the burrow, only a thin clay disc such as is used in the partitions, one line in thickness intervening between each.



In the specimens kept under observation the bees hatched out at various dates from March 15 to April 12.

The parasites affecting them were four in number, the most common being *Cryptus albitarsis* Cress. which affected 25 per cent. The cocoons of *Cryptus* are in shape exactly similar to those of their host, but possess a thinner, almost diaphanous wall.

Sapyga aculeata Cress. affected 7½ per cent.

Photopsis? affected 5 per cent.

Stelis sexmaculata Ashm. affected 5 per cent. The cocoons of this species are all somewhat alike in texture, are 4 lines long, of an oblong shape, with rounded ends and of a gray opaque color. Appended is Mr. Ashmead's description of this new species.

STELIS Panzer.

Stelis 6-maculata Ashm. n. sp. ♀.—Length 5 mm. Black, clothed with a griseous pubescence, denser on pleura and face; the first, second and third abdominal segments each with two oblong white spots. Wings subfuliginous, the second recurrent nervure almost interstitial with the second transverse cubital nervure. Head opaque, closely punctate; thorax and abdomen also punctate, but shining.

Comes nearest to *S. fœderalis* Smith, which, however, has only two white spots on the abdomen.

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NOTES ON THE WHITE CALLIMORPHAS.

By HARRISON G. DYAR.

Mr. O. D. Foulks has sent me some of the *Callimorpha* mentioned as *C. vestalis* on page 298 of the November number of the NEWS. They prove to be *fulvicosta*, and the specimens grade into *reversa* and not *lecontei*. The series now before me suggests a change in the synonymy given by Mr. Neumoegen and myself (Jour. N. Y. Ent. Soc. i, 159–161). At that time we did not recognize *vestalis*, but wrongly identified the form as *fulvicosta*, and consequently renamed the true *fulvicosta* as var. *duplicata*. Mr. Foulks' specimens are *H. reversa*, var. *duplicata*, N. and D., but the recognition of *vestalis* will correct the synonymy as below. I differ from Mr. Lyman and Prof. Smith (see Check List, 1891) in not considering three white forms, *consita*, *fulvicosta* and *vestalis* as of specific rank. That they are varieties is proven in the case of *fulvicosta* by Mr. Foulks' specimens, and is indicated in the case of *vestalis* by examples from Mr. J. S. Faaborg, of Clinton, Iowa.

The larvæ of only two species of *Haploa* are known with any certainty, and it is to be hoped that special efforts will be made to discover the rest.

1. **Haploa clymene** Brown.
interrupto-marginata de Beauvois.
comma Walker.

Larva bright yellow with white lateral stripe, mottled along its upper edge with bright red; the anal end faced with red markings (Siewers).

These observations are so far without corroboration. If correct, the larva is very distinct.

2. **H. colona** Hübner.
carolina Harris.
clymene Esper.
var. **conscita** Walker.
lactata Smith.

Dr. Riley found the larva on oak, but we have no other evidence about it.

3. **H. reversa** Stretch.*
suffusa Smith.
var. **fulvicosta** Clemens.
duplicata Neumoegen and Dyar.

Larva black, a bright yellow dorsal and stigmatal stripe, the latter centered with a broken black band (Saunders, Riley).

The two published descriptions correspond. The stigmatal band is apparently broken by black in the manner of the European *dominula.*

4. **H. confusa** Lyman.

Larva black, yellow dorsal, stigmatal and subventral lines, the latter broken into dots and partly obsolete (Lintner, Lyman, Dyar).

My observations agree with those of Mr. Lyman. Dr. Lintner's description is too brief for certain recognition.

5. **H. lecontei** Guerin.
var. **confinis** Walker.
var. **militaris** Harris.
var. **vestalis** Packard.

Larva black, with rich yellow dorsal and lateral lines (Strecker).

Prof. Smith refers the moths bred from these larvæ to *militaris.* The statements about their hybrid origin seem confusing, and there is a possibility of misidentification. We must await further observations on *clymene* and *lecontei* of which they were said to hybrids.*

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* By rule of priority this must be known as *fulvicosta* with *reversa* as variety. The species differs from *colona* only in the secondaries being white instead of yellow, and these forms may not be specifically distinct.

6. **H. contigua** Walker.

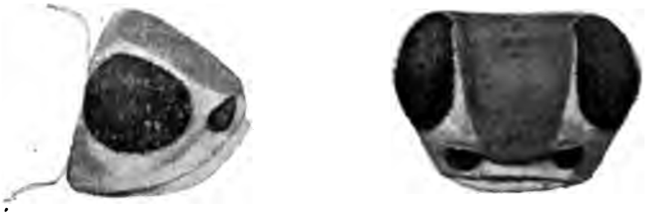
The larva seems entirely unknown. By the rule of priority this must be known as *fulvicosta* with *reversa* as variety. The species differs from *colona* only in the secondaries being white instead of yellow, and these forms may not be specifically distinct.

———o———

A NEW SUBFAMILY OF EPHYDRIDÆ.

By D. W. Coquillett, Washington, D. C.

In a very interesting collection of Diptera recently captured by Mrs. Annie T. Slosson in southern Florida and submitted to the writer for names are two specimens of a hitherto undescribed form allied to the Ephydridæ, but differing from all of the known species by the entire lack of long bristles, and by the unusually short antennal arista. The absence of a spur on the second antennal joint and of bristles on the outer side of the middle tibiæ, taken in connection with the hairy eyes, would throw this form in the subfamily Hydrellina, but the entire absence of bristles, the usually short antennal arista and the short face, will necessitate the erection of a new subfamily, for which the name *Lipochæta* is proposed (from the Greek λιπ, without, and χαιτε, seta). The principal characters of this new form are as follows:



Lipochæta slossonæ Coq.

LIPOCHÆTA n. gen.

Entire insect destitute of long bristles. Head as broad as the thorax, in profile longer than high; eyes protuberant, round,

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* Since the above was written Dr. Packard has published a description of the stages of *H. lecontei* as far as the hibernation period (Jour. N. Y. Ent. Soc. iii, 176). Unfortunately, the descriptions of the later stages are very brief, but what is stated seems to confirm Strecker's description quoted above.

densely short pilose; face scarcely one-eighth as long as the front, clypeus projecting nearly the length of the face, oral opening one and one-half times as wide as the front; cheeks at least one-half as wide as the eye-height; antennæ shorter than the transverse diameter of either eye, bent outwardly and partly concealed in cavities in the face; first joint minute, the second broader than long, the third hemispherical. narrower than, but nearly as long as the second; arista dorsal bare, shorter than the third antennal joint, unusually robust, less than three times as long as broad; scutellum subconical, one-fourth as long as the thorax. Abdomen elongate oval, nearly as wide as and about as long as the thorax, composed of five segments. Legs slender, claws large, curved, pulvilli well developed; auxiliary vein wanting, second basal cell wanting, hind cross-vein slightly more than its own length from the tip of the fifth. Type, the following species:

Lipochæta slossonæ n. sp.—Black, the halteres and tarsi yellow; densely whitish pollinose, the front except next the eyes, dorsum of thorax and of scutellum grayish brown pollinose. Wings whitish hyaline, veins brown, the third and fourth strongly converging toward their tips. Length 2.5 mm.

Punta Gorda, Fla. Two specimens from Mrs. Annie T. Slosson, who writes that she took seven specimens which were flying over mud.

———o———

Three new Bees of the Genus Calliopsis from Colorado.

By T. D. A. COCKERELL.

Calliopsis bakeri n. sp. ♂.—Length 5 mm , of slender build, wholly black, except that the tarsi become dark brown, the mandibles rufescent at tips, and the clypeus is entirely very pale yellow. Head rather large, rounded, slightly broader than long, face somewhat narrowing below, hindmost ocelli nearer together than the distance of either from the orbit; head throughout with large, close punctures, sparse, however, on clypeus. Lower corners of face and cheeks with long white hairs; scape with long brownish hairs; antennæ long, wholly black; mesothorax and scutellum with small, close punctures, pleura with larger, sparse punctures; post-scutellum pubescent, base of metathorax minutely lineolately sculptured. Claws cleft only at tips; tegulæ shining, very dark brown. Wings smoky, nervures and stigma dark brown, second submarginal cell narrowed a little more than half to marginal. Abdomen with the first segment smooth and shining, sparsely punctured; the other segments with a basal, dull, minutely roughened portion, then a punctured portion, and then a smooth portion.

Hab.—Colorado: Chamber's Lake, Larimer County, 9500 feet, July 18, 1895 (C. F. Baker). Known by the yellow color being confined to the clypeus; in this it is like *C. californicus*, but in that the clypeus is not all yellow.

Calliopsis innuptus n. sp. ♀.—Length 6.5 mm., stoutly built, black, the face-marks yellow, and the tarsi reddish brown. Head somewhat broader than long, coarsely and confluently punctured, the punctures more sparse on vertex, and especially lower part of face; hindmost ocelli if anything a little further apart than the distance of either from the orbit; antennæ rather short, wholly black, second joint of flagellum remarkably short; a longitudinal keel between the antennæ; clypeus and lateral face-marks bright chrome-yellow, the clypeus with the usual two dots; the lateral marks subquadrate, shaped something like the mainsail of a schooner, but narrower, extending considerably above level of clypeus, but not to level of antennæ, notched on the inner lower corner; the clypeus is not grooved; face practically free from hairs, but the lower margin of the clypeus has a sparse fringe; eyes dull sage-green. Thorax wholly dark, with tolerably profuse, short, dirty whitish pubescence; punctures of mesothorax and scutellum very large and fairly close; base of metathorax obliquely striate; tegulæ shining testaceous. Wings hyaline, slightly milky, nervures and stigma brown, costal nervure black, marginal cell hardly at all appendiculate, second submarginal narrowed about one-half to marginal. Legs black, knees and tarsi, and a short streak on anterior tibia, reddish brown; scopa of hind legs comparatively short and inconspicuous. Abdomen broad, apical margins of segments becoming narrowly testaceous, first segment with large, rather sparse punctures, the other segments with a transverse median punctured area.

Hab.—Colorado: Colorado Springs, middle of July, 1895 (Ckll. 3580). Also found by Mr. C. F. Baker (1593).

Another from Colorado Springs has the face more hairy and the second submarginal less narrowed above. This is quite distinct from *C. coloradensis*, *lepidus*, *andreniformis* and *maculatus*, the only four species with a partly light face and wholly dark abdomen in the ♀. It may possibly be the ♀ of some species so far only known in the ♂. It resembles the ♂ of *albitarsis* more than does the ♀ of that species.

Calliopsis renimaculatus n. sp. ♀.—Length about 5.5 mm., black, with a yellow spot on the face, form rather stout. Head broader than long, face very broad, not narrowed below; front and vertex shining, with large close punctures; occiput, cheeks and face with rather copious short white hairs; no acute keel between the antennæ; clypeus flat, not grooved; face wholly dark, except a transverse bright chrome-yellow kidney-shaped spot, half on clypeus and half supraclypeal, its convex side downwards;

antennæ rather short, black, with the last joint wholly, and joints 7 to 10 beneath, a lively red-brown. Thorax with fairly abundant grayish pubescence on border of prothorax, on pleura, postscutellum and sides of metathorax; mesothorax with shorter and less conspicuous pubescence; mesothorax and scutellum with very distinct, moderately close punctures, those on anterior part of scutellum much smaller and closer; base of metathorax feebly longitudinally wrinkled, the area behind shining, but minutely sculptured; tegulæ shining testaceous. Wings hyaline, with a slightly yellowish tint, nervures and stigma reddish brown, costal nervure black, second submarginal cell quite long, narrowed about one-half to marginal. Legs black, very hairy, a pale yellow spot at base of anterior and middle tibiæ, terminal joints of tarsi becoming more or less rufescent; first joint of hind tarsi produced into a comb-like structure at tip. Claws bifid at tips, the inner tooth much the shortest. Abdomen with white pubescence above, quite dense, except on dorsum of first segment and middle of posterior half of second, which are bare. The pubescence becomes much denser towards the tip, and is slightly tinged with reddish about the pygidium; dorsum of first segment impunctate.

Hab.—Colorado: Fort Collins, on *Solidago canadensis*, Aug. 15, 1895 (C. F. Baker). Easily recognized by the kidney-shaped mark on face.

——o——

A NEW DRASTERIA.

By Beverly Letcher.

Drasteria livida n. sp.—Head, thorax and primaries concolorous: abdomen and secondaries. Above, the primaries have the usual *Drasteria* markings in varying shades of brown on a light blue ground, the whole wing being irrorate more or less with brown; subapical spots very distinct; secondaries light blue with black terminal line and white fringes, sometimes basally a dark shade extending along inner margin, and in one instance from base to middle of median cell, otherwise immaculate. Beneath, both wings same light blue as secondaries above, the costal and outer margin of primaries slightly and the whole of the secondaries moderately irrorate with brown.

Hab.—California.

Described from two specimens, ♂ and ♀, taken by the writer in Siskiyou County, and a series of seven or eight (exact locality not known) in the collection of Dr. Behr, whose manuscript name I take pleasure in applying.

While this species resembles closely, in description, *D. cærulia* Grt., it requires but a glance to establish its right to at least a varietal, if not a specific name. Its larger size, its generally lighter shade, the slope of the t. a. line which forms a more acute angle with the inner margin and the denser irrorations below are distinctive. The dark shade on secondaries above is far from prominent, the impression conveyed without closer examination being that the wings are, without markings, a brilliant blue.

OBITUARY.

Mr. **John B. Lembert** was lately found murdered in his lonely cabin on the Merced River in California.

"There is no more enchanting mountain valley in California than the Tuolumne meadows, 9000 feet above the level of the sea. It was here that Lembert built his cabin and staked off a quarter section in the center of the valley, on the margin of the grass, and a matter of seventy-five yards from the fine soda spring which all travelers remember, some with pleasant thoughts, others with wry faces. Who he was or where he came from I do not know. I have asked these questions of many persons who were acquainted with him—some as intimately as it was possible to become with John Lembert—but evidently he had never told them.

"In the summer and until late in the fall the Tuolumne meadows are a paradise. Save for an occasional storm, which is over in no time, it is one long spring day. Birds and bees and butterflies and myriads of insects—some not altogether welcome—make their home here, and many kinds of flowers bloom in succession, not only in the meadow, but through the forest and on the loftiest crags. Here the old man lived alone, eating enough to sustain life and studying the fauna and flora. When his money ran low—and he never had much—he would catch some butterflies, rare in other altitudes, and send them "below" to Eastern museums, to Berkeley and later to Stanford. He got little for these specimens, but Lembert could live on almost nothing.

"He was a fair all-round naturalist, but entomology was his specialty, and butterflies his passion. Some of these have been named after him. He possessed many of the standard works on these subjects, and also some general literature, but in the latter he had evidently exhausted his interest by frequent perusal, for he became intoxicated with delight on occasionally being given books or magazines by visitors to the meadows. In recent years many of the university students stopping at the soda spring donated him what reading matter they might happen to have with them, and afterward sent him more from the Yosemite or from their homes. He was a man evidently of some attainments. His language was faultless, and his command of Latin—of which he seemed somewhat proud—indicated a thorough classical education."

The theory has been advanced that Lembert was murdered by the Yosemite Indians in revenge for the desecration of their ancient graves while in search for ethnological material for the Smithsonian Institution. He was well known to Eastern entomologists, especially those interested in Lepidoptera, to whom he sent many rare species.

Entomological News for June was mailed May 28, 1896.

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ANTS AS PERSONAL PROPERTY HOLDERS.

By O. W. OESTLUND, Minneapolis, Minn.

It is a well known fact that plant-lice are commonly attended by ants, which feed upon the sweet fluid that the aphis emits from time to time. But it is probably not as well known that ants, in some cases at least, will appropriate such colonies as their own property, and will guard them most effectively against all intruders, especially against ants of a different species that may attempt to get some of the sweet fluid.

Aphis thaspii is a very common aphis in Minnesota on the umbels of *Thaspium aureum*, which seems to be much sought for by ants; probably on account of the choice quality of the fluid they give, like our own breeds of Jerseys. There are at least four distinct species that are commonly found to attend them.

Without attempting to give the scientific name of the ants in question, it may suffice to state that one was a small black ant, the second a small brown ant, the third a rather large brown ant, and the fourth a large black ant with the anterior part of the body reddish. As it was noticed that each colony of aphis was attended by only one species of ants, there presented itself an opportunity to make some simple experiments that might throw some light on the relationship of ants to the aphids as well as to each other. The number attending a given colony varies, as individuals are continually coming and going, but at no time will the colony become quite deserted.

Capturing one of the small black ants and transferring it to a plant on which the small brown ants were found, it started up the stem, but on reaching the aphids it soon encountered one of the brown ants, which at once gave the chase and the intruder got down the plant as rapidly as possible. Transferring the same to a plant on which the large brown or black ants were found, it would also at once be attacked and had to beat a rapid retreat. Now transferring one of the large black ants, which were at least twice the size of the smaller, and starting it up a plant on which the small black ants were found, it would also at once be attacked. Sometimes the large ant, which probably considered itself more than a match for the smaller ones, would seem to pay no attention to the attack at first, but proceeded among the aphids to gather the sweet fluid ; but as the attack of the first would soon be re-enforced by others it did not take long to convince the large one that he was trespassing upon private property, and he would beat a quick retreat or let himself fall to the ground. Repeated attempts on all the four species to get them to mix on the same plant invariably resulted in the driving off of the intruder, while the small ants, as well as the large brown one, would retreat by running down the stalk : the large black ant would usually let itself drop to the ground as soon as it became aware of its mistake, evidently having found this the surest and quickest way of freeing itself from a combined attack of the smaller ones.

In transferring, on the other hand, one of the black ants, or either of the four, to a different plant on which the same species was found, it would meet no resistance, but had full freedom to the use of the Jerseys.

These simple experiments, which were repeated several times with practically the same results, go to show that ants hold property, not only as real-estate in their homes or nest, but also what might well be called personal property, which they may acquire and hold at some distance from their homes, just as man would hold his herd of cattle on the prairies. They will also take care of and defend their property with as much spirit and effect as ever a cowboy defended the herd intrusted to his care.

TYPES IN THE NEUMOEGEN COLLECTION.

WITH A FEW NOTES THEREON.

By Dr. RODRIGUES OTTOLENGUI.

Lussa nigroguttata ♂ Grt. Florida.
Tricholita inconspicua ♂ Grt. Arizona, Doll.
Tricholita completa ♂ (♀) Grt. Arizona, Doll.
Nonagria permagna ♀ Grt. Florida.
Fota armata ♀ (♂♀) Grt. Arizona, Morrison.
Fota minorata ♂ (♀) Grt. Arizona, Morrison.
Tapinostola orientalis ♀ Grt. Maine.
Leucania bicolorata ♂ (♀) Grt. Arizona, Doll.
Leucania stolata ♀ Smith. Arizona, Doll.

This specimen is rich in "type labels." One is in handwriting of Mr. Grote, and one in the chirography of Prof. Smith. The explanation is that Mr. Grote named and labeled the specimen, but appears not to have published any description of it. Later Prof. Smith described the species, but, to avoid possibility of synonymy, adopted the name selected by Mr. Grote.

Leucania farcta, var. *roseola* ♂ Smith. British Columbia.
Leucania imperfecta ♂ Smith. Arizona.
Ufeus sagittarius ♂ Grt. California.
Eucalyptera obscura ♂ Grt. Arizona.
Adipsophanes terminellus ♂ Grt. Texas.
Adipsophanes egestis ♀ Smith. Arizona, Doll.

Again we have type labels from both Mr. Grote and Prof. Smith, and here also Prof. Smith has courteously adopted Mr. Grote's name for a species which he had not described.

Fotella notalis ♂ Grt. Arizona, Doll.
Caradrina fragosa ♂ Grt. Arizona, Doll.
Caradrina civica ♂ ♀ Grt. New Mexico.
Pyrophila triquetra ♀ Grt. Arizona, Doll.
Orthodes nitens ♂ ♀ Grt. Maine.

This is a synonym of *enervis* Gn.

Orthodes virgula ♂ ♂ Grt. Arizona, Doll.
Orthodes irrorata ♂ (♀ ♀) Smith. California.

This specimen bears a printed type label, but there is none in handwriting of Prof. Smith. In my opinion all types should be labeled by those who describe the species. However, in Prof. Smith's Catalogue of the Noctuidæ, a note in connection with this species reads: "Types are in the Graef, Neumoegen and Edwards collections."

Stretchia variabilis ♂ ♀ Smith. Colorado, Bruce.

Tæniocampa peredia ♀ (♂) Grt. Maine.
Tæniocampa columbia ♂ (♂ ♀) Smith. British Columbia.
Tæniocampa consopita ♀ (♂♂) Grt. Arizona, Doll.

This is a synonym of *modifica* Morr.

Tæniocampa perforata ♀ (♂) Grt. Arizona, Doll.
Tæniocampa addenda ♂ ♀ Smith. California.
Tæniocampa ferigera ♀ (♂) Smith. British Columbia.
Tæniocampa quisana ♂ Smith. British Columbia.
Trichoclea decepta ♂ (♀) Grt. Arizona, Doll.
Trichoclea postica ♀ Smith. Colorado, Bruce.
Trichocosmia inornata ♂ ♀ ♀ Grt. Arizona, Morrison.
Trichorthosia paralella ♀ Grt. New Mexico.
Trileuca buxea ♂ (♀) Grt. Texas.
Trileuca dentalis ♀ Smith. Texas.

Should the "type" specimen long remain the sole representative of this species, I think it will be safe to decide that this species is invalid. It appears to be identical with *Xanthoides transversa* from India, and its shabby appearance lends color to the theory that it, the "type," *may have traveled a long distance after death.* It was received by Mr. Neumoegen from Mr. Hartman, of Houston, Texas, a gentleman whose collection includes specimens from all parts of the world, so that it is quite possible that an innocent error has occurred.

Cea immacula ♂ Grt. Arizona.

In Smith's check list, as well as in his catalogue, this name is written *immaculata.* Mr. Grote's original description is not at hand, but the type label in his chirography is as above.

Anchocelis digitalis ♂ Grt. Maine.
Orthosia citima ♂ ♀ Grt. Arizona.
Homoglæa hircina ♂ (♀) Morrison. Illinois.
Scopelosoma moffatiana ♂ (♂) Grt. Maine.
Xylina pexata var. *washingtoniana* ♀ Grt. Washington Territory.
Nystalea indiana ♀ Grt. Indian River, Florida.

A note by Mr. Neumoegen calls this a Notodontid.

Morrisonia bisulca ♂ (♀) Grt. Arizona, Doll.
Xylomiges pulchella ♂ (♀) Smith. British Columbia.
Xylomiges candida ♂ (♀) Smith. British Columbia.
Xylomiges peritalis ♂ Smith. Colorado, Bruce.
Xylomiges cognata ♂ (♂ ♀ ♀) Smith. British Columbia.
Pleroma obliquata ♂ (♂ ♀) Smith. Colorado, Bruce.
Pleroma apposita ♂ Smith. British Columbia.

A wonderfully beautiful specimen.

Cucullia montanæ ♂ (♂) Grt. New Mexico.

Cucullia cita ♂ Grt. Arizona.

A synonym of *lætifica* Lint.

Cucullia bistriga ♂ Smith. Colorado, Bruce.
Rancora strigata ♂ Smith. British Columbia.

This is a "type" of both genus and species.

Eutella pulcherrima ♂ ♀ Grt. New Jersey.
Telesilla carneola ♀ Smith. New Mexico.

The generic name *Ogdoconta* Butl., has priority according to Smith's list and Catalogue.

Plusia scapularis ♂ ♀ Hy. Edwards. British Columbia.
Plusia angulidens ♀ (♂ ♂ ♀) Smith. Colorado, Bruce.
Plusia celsa ♂ ♀ Hy. Edwards. Oregon.
Plusia accurata ♀ Hy. Edwards. Washington.

Doubtfully placed in this genus.

Gonodonta unica ♂ Neum. Florida.
Basilodes chrysopis ♂ (♀) Grt.
Basilodes territans ♀ (♂) Hy. Edwards. Arizona.
Basilodes mirabilis ♂ Neum. Arizona, Morrison.
Stiria sulphurea ♂ ♀ Neum. Arizona, Doll.

Curiously enough Mr. Neumoegen described *Stiria nanata*, "Papilio" vol. iv, p. 95, and the "type" should be here, whereas there is no representative whatever of the species in the collection.

Stibadium aureolum ♂ (♂ ♀) Hy. Edwards. Arizona, Doll.
Stibadium curiosum ♂ Neum. Arizona, Morrison.
Plagiomimicus triplagiatus ♀ Smith. New Mexico.
Plagiomimicus expallidus ♂ Grt. Montana.
Plagiomimicus viridifera ♂ Grt. Arizona.
Acopa incana ♂ (♀) Hy. Edwards. Arizona, Doll.
Neumoegenia poetica ♂ ♂ Grt. Arizona, Doll.

This is the "type" of the genus as well as the species. A wonderful insect, with secondaries of pure metallic gold.

Antaplaga sexseriata ♂ ♀ Grt. Arizona, Doll.
Antaplaga composita ♀ Hy. Edwards. Arizona, Morrison.
Antaplaga thoracica ♂ ♀ Hy. Edwards. Arizona, Morrison.

Composita and *thoracica* comprise Hy. Edwards's genus *Eulithosia*, and are therefore "types" of a generic name, which is now unoccupied. See Catalogue of Noctuidæ, Smith, page 266.

Grotella dis ♂ ♀ Grt. Arizona, Doll.
Oxycnemis advena ♂ (♀) Grt. Arizona, Doll.
Oxycnemis perfundis ♂ Smith. Texas.
Oxycnemis nivalis ♀ Smith. Texas.
Copablepharon subflavidens ♂ (♀) Grt. Montana.

Copablepharon longipenne **♂ Grt. Montana.**
Thyreion rosea **♂ Smith. Colorado, Bruce.**
Chamæclea pernana **♂ ♀ Grt. Arizona, Doll.**

Described in 1881 as a *Chariclea*, and made a new genus *Chamæclea* in 1883, both descriptions being by Mr. Grote. I presume this becomes the type of a new genus as well as of the species, notwithstanding the fact that the species was described first.

Alaria felicitata ♀ Smith. Utah.
Rhodosea julia ♀ (♂) Grt. New Mexico.
Heliodora magnifica ♂ Neum. Texas.

Type of genus as well as species.

———o———

ON A NEW CYANIDE BOTTLE.

By L. E. Ricksecker.

Several years ago I invented a new killing-jar, and having thoroughly tested the same, and found it a great improvement on the old jars, I now wish to publish and dedicate it to the free use of the entomological fraternity. It consists of a glass jar or bottle of any size, having a good stopper, made of cork or rubber, preferably the latter, through which is inserted a strong glass tube, to contain the cyanide of potassium.

This tube should be closed at the upper or outside end. After filling the tube with the cyanide, the lower end can be plugged with a roll of blotting paper or any porous substance that will allow the fumes to escape into the jar. The insertion of the tube through the stopper should be done in a neat and thorough manner, so that the fumes cannot escape and that the tube cannot slip in or out. If a large rubber stopper is used make the hole somewhat smaller than the tube and force the latter through the hole with pressure.

The advantages of this killing-jar over the old style of jars are many :—

The Cyanide is always in sight.
It does not dissolve so readily.
It cannot "muss" the specimens or the hands.
It is easily renewed or recharged.

The same stopper and charged tube can be used on any number of jars or bottles of the same size. Last, but not least, the jar can, after each day's collecting, be thoroughly washed and dried. This is really *the* advantage, for a clean jar is necessary to clean, satisfactory collecting.

BIOLOGICAL STUDIES IN ENTOMOLOGY.*

By CARL F. BAKER, Fort Collins, Col.

In a recent report I gave an account of a few observations on the habits of some Aculeate Hymenoptera. In connection with the writing of that report I read the interesting series of articles in "Psyche," by Mr. Ashmead, giving a summary of all that is known regarding the habits of American Aculeata. The smallness of the list of species considered, and the meagreness of the information regarding them, is, in view of the number of working entomologists in this country, simply astonishing. A dearth of material cannot be urged as an excuse, for forms of this group are abundant everywhere, and often not waiting for us to come to them, come to us in our own dwellings to take up their abode.

Hymenopterists are not the only specialists laggard in this respect. The lepidopterists have done well, but the dipterists, coleopterists, and neuropterists, have shown a most inexcusable negligence in this direction.

An inspection of some numbers of our entomological journals would almost lead one to believe that the study of entomology in this country had to a large extent really degenerated into a study of "dried bug shells." Classification is but a means to an end,—an immense ruled note-book in which the results of biological investigation may be recorded, each fact in its proper place—in its proper relation to other facts. To be an entomologist it is not at all necessary to describe a "new species," or to know thousands of "bug names." The great entomologist is he who, by long practice, becomes able to SEE quickly and accurately from the entomological point of view, and to record, *scientifically*, what he sees. This is what made Riley's fame, and the fame of many another great entomologist. A young friend of mine, who had a quite erroneous idea of entomological work, suggested to me that when every last bug had been swept into a net, impaled on a pin, and a name given it, that then the entomologist would be "out of a job." I hastened to tell him then that the entomologist's work would be but really begun.

The field of biological work in entomology is one of infinite breadth and grandeur. Life-histories, habits, the intricate relations of insects to plants, and to other insects and forms of life, mimicry, and local and geographical distribution, all offer a multiplicity of questions and problems of surpassing interest. And the good thing about this work is, that no matter how isolated a student may be, or how poor his library or equipment, to him these questions are all open for investigation. And the value of his studies, the importance of his contributions to entomological knowledge, are only limited by his conscientiousness, "stick-to-it-iveness," and ability to WORK.

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* Twelfth bimonthly report to the Say Memorial Chapter.

Some complain of being in an "unfavorable," "poor," or "overworked" locality. I should say, the more so the better. For the greater acuteness and more persistent application that such conditions would necessitate, could only result in studies of greater value, and consequently greater good, both to science and to the worker concerned.

If you do not catch the spirit of such investigation, read any of Darwin's special works, or Lubbock's "Ants, Bees and Wasps." There are three late articles in "Psyche" which echo this spirit, and which are well worth the reading. These are :—

(1). Notes on Habits of *Trypoxylon rubrocinctum* and *T. albopilosum* by G. W. and E. G. Peckham.

(2). Habits and Parasites of *Stigmus inordinatus* Fox, by A. Davidson, M. D., Los Angeles, Cal.

(3). Some Habits of *Formica obscuripes* Forel, with notes on some insects found associated with it, by George B. King, Lawrence, Mass.

———o———

THE PRAYING MANTIS IS HARD TO KILL.

By H. M. STANLEY.

During the first Summer spent in Mexico, before becoming accustomed to the various forms of grotesque and poisonous insect life, I was much annoyed by the praying mantis, *Mantis religiosa*. This decidedly rollicky "bug," locally known as *compomoche*, would sail into my room in the evening and proceed to careen around on the table among the writing materials with a diabolically knowing twist to its hammer-shaped head and goggle eyes, most disturbing to a consecutive train of thought.

Once, in utter desperation, after many times driving the pest from my writing pad, I caught up a pair of scissors and made a dash at it to see if I could settle it by decapitation. The cut caught it just in front of the wings and the severed head, fore-legs, and about one-half an inch of the slender thorax worked itself to the floor and was packed away by the ants. The part which remained standing on the table was one and one-half inches in length, and consisted of balance of the thorax, wings, two pairs of legs and the abdomen.

For possibly half a minute this was perfectly still, then deliberately the wings were spread. This spreading of the wings was laterally as in flight; first the cases were raised until nearly perpendicular. The wings then opened like fans, forming two parallel, vertical planes. At the same time the more forward pair of the four legs left was drawn well under the body, well to the front and straightened, causing a very erect position to be assumed. In this curious pose a slow, circling walk from right to left was commenced, the rear legs traveling more rapidly, or in reality having more lateral reach from the position of the body; the same number of steps would carry them over more ground. This was kept up for an hour, when it ceased.

The next morning, finding it yet standing, I touched it with a lead pencil. Again it started on its circular march, but the wings were only slightly opened. Up to 10 P.M. on the night of the third day after the decapitation, this same effect was produced, the only difference being the gradual lessening in the amount of energy exerted, both as to rapidity of motion, amount of space covered and duration. This covers at least seventy-four hours. On the morning of the fourth day the body was lying on its side, and all signs of life had ceased.

In order to ascertain if this motion was entirely without method, I placed a book in the path on the second day and was surprised to see with what care and judgment it was surmounted. I verified this experiment on a number of occasions and always with the same result. A few evenings ago, here in New Mexico, I tried it again, but found that some twelve hours was the limit. Possibly this may be accounted for by the fact that this is a much colder climate than San Ricardo, where I first tried it, in old Mexico.

Will some of our entomologists tell us if this is an unusual display of vitality for an Orthoptera?—*Popular Science News.*

COLEOPTERA OF CENTRAL ILLINOIS.—No. II.

By A. B. Wolcott, Bloomington, Ill.

I have previously recorded (Ent. News, vol. vi, p. 309) 102 species of Coleoptera taken in the vicinity of Bloomington. The present list is of species taken the past season, representing collecting trips averaging about two a week.

About twenty-five per cent of the past season's collecting is as yet undetermined (not having been submitted to authorities for identification), but as the list now contains nearly 250 species, I thought it well to give it at the present time.

The country surrounding this place is almost entirely open prairie, with here and there a heavy patch of timber, which is rapidly being converted into fire-wood. The soil is being brought well under cultivation and drained ; even swamps of considerable size are yielding up their fertile land under the drainage system ; these facts combine to make the *present* study of our Coleoptera very opportune.

The past Summer, I spent four days collecting at Springfield, Ill., which, although in central Illinois, is sixty miles south of Bloomington ; and there took some very good things, those species which were taken only at Springfield are marked with a *, those which occurred at both Springfield and Bloomington are designated with a †, the remainder were taken within a radius of thirty miles from Bloomington.

I take the present opportunity of thanking Messrs. H. F. Wickham, W. M. Hill and Chas. C. Adams and especially Dr. G. H. Horn, for their determination of many of the following species:

Correction.—*Galeruca xanthomelæna* Schr. of my former list must be erased as the determination was an error.

CICINDELIDÆ.

* Tetracha virginica *Linn.*
Cicindela unipunctata *Fabr.*
    hirticollis *Say.*

CARABIDÆ.

Carabus sylvosus *Say.*
    serratus *Say.*
Calosoma scrutator *Fabr.*
Elaphrus ruscarius *Say.*
† Pasimachus elongatus *Lec.*
Scarites subterraneus *Fabr.*
Scarites substriatus *Hald.*
Clivina corvina *Putz.*
    impressifrons *Lec.*
    bipustulata *Fabr.*
Bembidium inæquale *Say.*
    nitidulum *Dej.* [*Linn.*
    quadrimaculatum
Tachys incurvus *Say.*
Amara interstitialis *Dej.*
    obesa *Say.*
† Diplochila laticollis *var.* major *Lec.*

Calathus gregarius *Say.*
Platynus octopunctatus *Fabr.*
decorus *Say.*
Casnonia pennsylvanica *Linn.*
Lebia atriventris *Say.*
viridis *Say.*
scapularis *Dej.*
pumila *Dej.*
Cymindis pilosa *Say.*
Apenes sinuata *Say.*
Brachynus americanus *Lec.*
cordicollis *Dej.*
Chlænius erythropus *Germ.*
sericeus *Forst.*
prasinus
tricolor *Dej.*
† tomentosus *Say.*
pennsylvanicus *Say.*
Brachylobus lithophilus *Say.*
Geopinus incrassatus *Dej.*
Cratacanthus dubius *Beauv.*
Harpalus caliginosus *Fabr.*
Stenolophus ochropezus *Say.*
Bradycellus rupestris *Say.*
Anisodactylus sericeus

HALIPLIDÆ.

Cnemidotus 12-punctatus *Say.*

DYTISCIDÆ.

Laccophilus maculosus *Germ.*
proximus *Say.*
Coptotomus interrogatus *Fabr.*
Agabus semivittatus *Lec.*
tæniolatus *Harr.*
Colymbetes sculptilis *Harr.*
Thermonectes basilaris *Harr.*
Cybister fimbriolatus *Say.*

GYRINIDÆ.

Gyrinus (confinis ?) *Lec.*
analis *Say.*
Dineutes assimilis *Aube.*

HYDROPHILIDÆ.

Hydrophilus ovatus *G. and H.*
triangularis *Say.*
Tropisternus nimbatus *Say.*
glaber *Hbst.*
Berosus striatus *Say.*
Laccobius agilis *Rand.*
Creniphilus subcupreus *Say.*

SILPHIDÆ.

Necrophorus orbicollis *Say.*
tomentosus *Web.*
Silpha inæqualis *Fabr.*
noveboracensis *Forst.*

PSELAPHIDÆ.

Bryaxis (abnormis ?) *Lec.*

STAPHYLINIDÆ.

Aleochara fuscipes *Fabr.*
Creophilus villosus *Grav.*
Cryptobium bicolor *Grav.*
Erchomus ventriculus *Say.*
Conosoma crassum *Grav.*

SCAPHIDIIDÆ.

Scaphidium *var.* piceum *Mels.*

COCCINELLIDÆ.

Coccinella glacialis *Fabr.*
Myzia (pullata ?) *Say.*
var. ?
Psyllobora 20-maculata *Say.*
Brachyacantha ursina *Fabr.*
Hyperaspis undulata *Say.*
signata *Oliv.*

ENDOMYCHIDÆ.

Rhanis unicolor *Ziegl.*
Aphorista vittata *Fabr.*

EROTYLIDÆ.

Dacne 4-maculata *Say.*

COLYDIIDÆ.

Ditoma thoracica *Say.*
Bothrideres geminatus *Say.*
Cerylon castaneum *Say.*

RHYSSODIDÆ.

Rhyssodes exaratus *Ill.*
Clinidium sculptile *Newm.*

MYCETOPHAGIDÆ.

Mycetophagus punctatus *Say.*
flexuosus *Say.*

DERMESTIDÆ.

Dermestes lardarius *Linn.*
caninus *Germ.*

Dermestes marmoratus *Say.*
Attagenus piceus *Oliv.*
Trogoderma ornatum *Say.*
Anthrenus musæorum *Linn.*
varius *Fabr.*

HISTERIDÆ.

Hister abbreviatus *Fabr.*
Epierus sp. not det.
Saprinus pennsylvanicus *Payk.*
Aeletes politus *Lec.*

NITIDULIDÆ.

Carpophilus hemipterus *Linn.*
brachypterus *Say.*
Conotelus (obscurus ?) *Erich.*
Epuræa truncatella *Mann.*
Phenolia grossa *Fabr.*
Omosita colon *Linn.*

PARNIDÆ.

Dryops lithophilus *Germ.*

HETEROCERIDÆ.

Heterocerus (mollinus?) *Kies.*

ELATERIDÆ.

Cryptohypnus abbreviatus *Say.*
Elater nigricollis *Hbst.*
linteus *Say.*
Drasterius dorsalis *Say.*
Melanactes piceus *De G.*

BUPRESTIDÆ.

* Dicerca lurida *Fabr.*
Melanophila longipes *Say.*
Chrysobothris femorata *Fabr.*
* Acmæodera pulchella *Hbst.*
Agrilus otiosus *Say.*

LAMPYRIDÆ.

Eros aurora *Hbst.*
Plateros canaliculatus *Say.*
Lucidota atra *Say.*
Pyropyga decipiens *Harr.*
Photinus scinctillans *Say.*
pyralis *Linn.*
Photuris pennsylvanica *DeG.*
Podabrus basilaris *Say.*
tomentosus *Say.*
Telephorus carolinus *Fabr.*
flavipes *Lec.*
bilineatus *Say.*
Polemius laticornis *Say.*

CLERIDÆ.

Aulicus sp. not det.
Thaneroclerus sanguineus *Say.*
Orthopleura damicornis *Fabr.*
Chariessa pilosa *Forst.*
Necrobia violaceus *Linn.*

PTINIDÆ.

Hadrobregmus carinatus *Say.*
Lasioderma testaceum *Duft.*
Bostrichus bicornis *Web.*

LUCANIDÆ.

Dorcus parallelus *Say.*
Platycerus depressus *Lec.*
Ceruchus piceus *Web.*

SCARABÆIDÆ.

Chœridium histeroides *Web.*
Onthophagus hecate *Panz.*
pennsylvanicus [*Harold.*
Atænius gracilis *Melsh.*
Geotrupes semiopacus *Jek.*
Clœotus aphodioides *Ill.*
Trox unistriatus *Beauv.*
Lachnosterna gibbosa *Burm.*
hirticula *Knoch.*
Anomala binotata *Gyll.*
Chalepus trachypygus *Burm.*
Allorhina nitida *Linn.*
Euphoria inda *Linn.*
fulgida *Fabr.*
Cremastochilus harrisii *Kirby.*
Osmoderma scabra *Beauv.*

CERAMBYCIDÆ.

Orthosoma brunneum *Forst.*
† Smodicum cucujiforme *Say.*
Eburia 4-geminata *Say.*
† Romaleum atomarium *Dru.*
† Batyle suturalis *Say.*
Xylotrechus colonus *Fabr.*
Strangalia luteicornis *Fabr.*
Leptura vittata *Germ.*
rubrica *Say.*

Leptostylus aculiferus *Say*.
Dectes spinosus *Say*.
Tetraopes femoratus
var. basalis

CHRYSOMELIDÆ.

Anomœa laticlavia *Forst*.
Babia quadriguttata *Oliv*.
Cryptocephalus 4-guttatus *Knoch*.
mutabilis *Melsh*.
bivittatus *Say*.
Fidia longipes *Melsh*.
viticida *Walsh*.
Chrysomela casta *Rogers*.
Gastroidea dissimilis *Say*.
cyanea *Mels*.
† Melasoma scripta *Linn*.
Phyllobrotica limbata *Fabr*.
Disonycha triangularis *Say*.
pennsylvanica *Ill*.
ermicollis
xanthomelæna *Dalm*.
alternata *Ill*.
Haltica chalybea *Ill*.
Systena frontalis *Fabr*.
tæniata *Say*.
Chætocnema (confinis?) *Cr*.
Odontota nervosa *Panz*.
* Cassida nigripes *Oliv*.
† bivittata *Say*.
† Coptocycla guttata *Oliv*.

BRUCHIDÆ.

Bruchus pisorum *Linn*.
obsoletus *Say*.

TENEBRIONIDÆ.

Merinus lævis *Oliv*.
Scotobates calcaratus *Fabr*.
Xylopinus anthracinus *Kn*.
Tenebrio molitor *Linn*.
Tribolium confusum *Duv*.
Hoplocephala viridipennis *Fabr*.
Platydema excavatum *Say*.
Boletotherus bifurcus *Fabr*.
Boletophagus corticola *Say*.
Meracantha contracta *Beauv*.

CISTELIDÆ.

Hymenorus obscurus *Say*.

MELANDRYIDÆ.

Penthe obliquata *Fabr*.
pimelia *Fabr*.
Melandrya striata *Say*.

MORDELLIDÆ.

Tomoxia sp. not det.
Mordella melæna *Germ*.
lineata *Mels*.
Mordellistena scapularis *Say*.

ANTHICIDÆ.

Corphyra pulchar *Lec*.

PYROCHROIDÆ.

Pyrochroa femoralis *Lec*.
† Dendroides canadensis *Latr*.

MELOIDÆ.

Meloe angusticollis *Say*.
Nemognatha vittata *Fabr*.
Macrobasis unicolor *Kirby*.
* Epicauta cinerea *Forst*.
† trichrus *Poll*.
* *var*.
vittata *Fabr*.
lemniscata *Fabr*.

RHIPIPHORIDÆ.

* Rhipiphorus limbatus ♂ ♀ *Fabr*.

RHYNCHITIDÆ.

† Rhynchites hirtus *Fabr*.

OTIORHYNCHIDÆ.

† Epicærus imbricatus *Say*.
Otiorhynchus ovatus *Linn*.

CURCULIONIDÆ.

Lixus concavus *Say*.
Endalus limatulus *Gyll*.
Gymnetron teter *Fabr*.
Centrinus scutellum-album *Say*.
perscillus *Sch*.
Balaninus uniformis *Lec*.
nasicus *Say*.

BRENTHIDÆ.

Eupsalis minuta *Dru*.

CALANDRIDÆ.

Rhodobænus 13-punctatus *Ill.*
Sphenophorus robustus *Horn.*
pertinax *Oliv.*
Sphenophorus melanocephalus [*Fabr.*
Cassonus corticola *Say.*

ANTHRIBIDÆ.

Brachytarsus variegatus *Say.*

NOTE.—The *Nemognatha vittata* of my list was taken on mullen, at the edge of sparse timber, only one specimen was found.

SINGULAR HABIT OF A CECIDOMYID.

By ANNIE TRUMBULL SLOSSON.

In the Summer of 1894, at Franconia, I one day saw resting upon a leaf a *Chrysopa*—lacewing fly—that seemed to have a black raised spot upon each wing. As I stooped to examine it more closely it flew away. A day or two later I again saw a similar insect, but failed to capture it. The same day I saw one flying and took it with my net. But it proved to have no such spots as I had seemed to see, and I was much puzzled. This happened several times. I would see plainly one or two dark spots on the wings of a *Chrysopa* in the air or on a leaf, but when I captured the insect there were no spots there. On one such occasion I found in my net a tiny, dark bodied fly, and wondered if it could have any connection with the mystery. The point was settled soon after by my taking a *Chrysopa* with a similar fly still clinging to one wing. I detached this from its support and sent it to Mr. Coquillett for identification. He returned it labeled "*Cecidomyia* sp." Since that time I have taken a great many specimens of *Chrypsopa* and *Meleoma* with a similar fly on one or both primaries. These generally dropped off the wing either in net or cyanide bottle. But this Summer I succeeded in preserving a specimen of *Chrysopa emuncta* Fitch, with its little burden intact. These I sent to Mr. Nathan Banks, and asked a solution of the puzzle. Mr. Banks cannot explain the mystery and had never before heard of this peculiar habit among the Diptera. He suggests that the Cecidomyid may be one that makes galls upon certain plants infested by aphids upon which *Chrysopa* feeds, and where it would naturally oviposit. "The fly," he writes, "being so frail may find it of advantage to attach itself to a stronger flying insect." This is ingenious and reasonable. But it will be a difficult matter to prove it by observation. I am anxious to know if anyone else has noted facts similar to or the same as those I recorded, and if any explanation has been given.

SPIDER FARMING.

Although entomologists have often raised spiders for purposes of scientific observation and investigation, spider raising as a money making industry is something rather novel. One has only to go four miles from Philadelphia, on the old Lancaster pike, says a Philadelphia paper, and ask for the farm of Pierre Grantaire to see what can be found nowhere else in this country, and abroad only in a little French village in the department of the Loire.

Pierre Grantaire furnishes spiders at so much per hundred for distribution in the wine vaults of merchants and the nouveaux riches. His trade is chiefly with the wholesale merchant, who is able to stock a cellar with new, shining, freshly labeled bottles, and in three months see them veiled with filmy cobwebs, so that the effect of twenty years of storage is secured at a small cost. The effect upon a customer can be imagined, and is hardly to be measured in dollars and cents. It is a trifling matter to cover the bins with dust, but to cover them with cobwebs spun from cork to cork, and that drape the neck like delicate lace, the seal of years of slow mellowing, that is a different matter. The walls of Mr. Grantaire's spider house are covered with wire squares from six inches to a foot across, and behind these screens the walls are covered with rough planking. There are cracks between the boards apparently left with design, and their weather-beaten surfaces are dotted with knot holes and splintered crevices. Long tables running the length of the room are covered with frames, wooden boxes and glass jars. All of these wires in the room are covered with patterns of lace drapery, in the geometical outlines fashioned by the spider artists. The sunlight streaming through the door shows the room hung with curtains of elfin-woven lace-work.

It is not all kinds of spiders that make webs suitable for the purposes of the wine merchant, and those selected by Mr. Grantaire are species that weave fine, large ones of lines and circles. They are the only webs that look artistic in the wine cellar on the bottles. The spiders that weave these are principally the *Epeira vulgaris* and *Nephila plumipes.*

When Mr. Grantaire has an order from a wine merchant he places the spiders in small paper boxes, a pair in a box, and ships them in a crate with many holes for the ingress of air. The price asked, ten dollars a hundred, well repays the wine merchant, who, at an expenditure of forty or fifty dollars, may sell his stock of wine for a thousand or more dollars above what he could have obtained for it before the spiders dressed his bottles in the robes of long ago. Mr. Grantaire has on hand, at a time, 10,000 spiders, old and young, the eggs of some of which, the choicest, he obtains from France.

When the mother spider wishes to lay her eggs she makes a small web in a broad crack, then she lays say fifty eggs, which she covers with a soft silk cocoon. In two weeks (or longer in Winter) the eggs begin to hatch, an operation that takes one or two days. The egg shells crack off in flakes and the young spiders have a struggle to emerge. They then begin to grow, and in a week look like spiders. They often moult and shed their skins like snakes. The brood has to be separated at a tender age, else the members of the family would devour each other until only one was left.—*Natural Science News.*

———o———

List of Rhopalocera Taken in Webster, New Hampshire.

By W. F. Fiske.

Danias archippus, common, two broods ; the second not a full one.
Euptoieta claudia, rare, August.
Argynnis idalia, common, July 1 to September.
    cybele, very common, June 20 to August.
    aphrodite, very common, June 20 to September.
    atlantis, scarce on lowlands, com. on mountains, June 12 to Aug
    myrina, very common, May to October, three broods.
    bellona, very common, May to October, three broods ; appears earlier than *myrina*.
Melitæa phæton, common, June, very local.
    harrisii, common, June, local on higher altitude than *phæton*.
Phycoides nycteis, common, June, local.
    tharos, very common, May to September.
Grapta interrogationis, rare, both forms in Fall brood.
    comma, com. form *harrisii* ; March, September, form *dryas*, Jun
    faunus, rare on lowlands, common on mountains.
    progne, some years common, others rare, rare in '95.
    j-album, some years common, larva found on blackberry ; common in 1894, '95.
Vanessa milbertii, common, two and perhaps three broods.
    antiopa, some years common, two broods ; common in 1892 '9 and '94 ; very common in '93.

- *Pyrameis atalanta*, common.
    - *huntera*, at times common, common in '94 ; scarce in '95.
    - *cardui*, common in 1887, '88, rare until 1895.
- *Junonia cœma*, said to have been seen, but authority not very good.
- *Limenitis arthemis*, common in 1886, '87, then rare until 1893, common in 1894 and '95 ; two broods, but second not a full one.
- *Limenitis* var. *proserpina*, rare, forms between the two occasionally taken.
    - *disippus*, common, two broods.
- *Satyrus alope*, common, July.
    - var. *nephele*, rare, July, intermediate forms common.
- *Debis portlandia*, somewhat common, June, July.
- *Neonympha canthus*, common, July.
    - *eurytris*, common, June.
- *Thecla humuli*, common, May to August ; two broods.
    - *calanus*, common, June, July ; one brood.
    - *strigosa*, scarce, June ; one brood.
    - *acadica*, scarce, June ; one brood.
    - *henrici*, scarce April, May.
    - *augusta*, common, local, April, May.
    - *niphon*, very common, April to June.
    - *titus*, common, June, July.
- *Feniseca tarquinius*, common, May to September ; broods numerous.
- *Chrysophanus hypophlæas*, very com., May to October; broods numerous.
    - ab. *fasciata*, common, all intermediate grades common.
    - ab. without outer row of spots, scarce.
    - *expixanthe*, somewhat common, cranberry bogs in July.
    - *thoe*, rare, May, June.
- *Lycæna pseudargiolus*, common, April, May.
    - var. *lucia*, not common, April, May.
    - form *neglecta*, common, June, July.
    - *comyntas*, common, May to August ; two broods.
- *Pieris rapæ*, very common, April to October.
    - *oleracea*, rare, April and Aug.
- *Colias philodice*, very common, May 1 to November 6, 1895 ; four broods.
    - var. *albanus*, rather common, in Fall broods ; in 1895 in Spring broods also.
    - var. *anthyale*, scarce, rare in Spring, but more common in Fall broods in 1895.
- *Papilio turnus*, common, May, June.
    - *troilus*, not so common, June, July ; 2nd brood rare in August.
    - *asterias*, scarce, formerly com. ; two and perhaps three broods.
- *Carterocephalus mandan*, rare, June.
- *Ancyloxypha numitor*, common, local, June.
- *Pamphila hobomok*, common, June.
    - var. *pocohontas*, scarce, June.
    - *sassacus*, common, May, June.

Pamphila metea, somewhat common, local, May.
mystic, very common, June ; rare in September.
leonardus, common, August, September.
peckius, common, June to October ; three broods.
cernes, common, June ; scarce, August, September,
manataaqua, scarce, July.
metacomet, very common, June, July.
otho egeremet, rather common, July.
bimacula, not common, June, July.
delaware, rare, one specimen July 10.
Amblyscirtes vialis, common, May, June.
samoset, scarce, June.
Nisoniades brizo, scarce, June.
icelus, common, May, June.
persius, rare, August and probably also June.
juvenalis, common, June.
Eudamus pylades, common, June.
tityrus, common, June, July.
bathyllus, one specimen.

I have personally observed all the above except *C. mandan*, *E. claudia* and *J. cœma*. *Mandan* and *claudia* are undoubtedly native, but the occurrence of *J. cœma* is somewhat doubtful.

Prodenia exquisita Moeschl. = *pulchella* H. S.—This moth is quite common in Jamaica, going as high up in the mountains as Cinchona, where it was taken by Mr. C. H. Nicholls. I find I have a note on its larva, which may as well go on record. Mrs. Swainson found the larva in the neighborhood of Bath, and described it as "soft dark brown, darker marks along sides and back, greenish brown above legs ; feeds on castor-oil plant." A form of the same species was bred by me in Feb., 1893, from a larva eating potato, received from Mr. J. R. Reece, Pedro, P. O. The pupa is shiny, smooth, brown.—T. D. A. COCKERELL.

Polyphylla variolosa.—On July 3, I took a specimen (♂) of this species in Ogunquit, Me., which, although normal in other aspects, had the antennæ on its right side peculiarly developed. From a greatly dilated third joint two separate fourth joints sprung, each bearing its own tip, and both clubs were perfectly developed. I found the males of this species to be very common, flying in the evening—and took several females laying eggs in small holes in a sand bank on a hill.—HARVEY N. DAVIS, Providence, R. I.

NOTHING so helps a newspaper as the imparting of useful information. "How shall I keep ants out of the sugar-bowl?" asks a correspondent. "Fill the sugar-bowl with salt," promptly responds *Texas Siftings*.

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., OCTOBER, 1896.

"The American girls have apparently come to the conclusion that the amusements which satisfied them last year are too stale to satisfy them for another season and they are going to adopt others which promise 'more fun.' Butterfly and moth hunting are to be counted amongst these novel recreations, and as they necessitate suitable costumes, which can be made as prettily as desired, they will doubtless soon become popular.

To catch a butterfly requires only a net, a little skill, and a little patience, but the capture of a moth is accompanied by more work, and a corresponding amount of fun. To begin with, it is necessary to attract them to a convenient spot by tempting them with something nice to eat, and for this purpose it is best to set out, just before dusk, with a pot of sugar and treacle, and a little rum or anise-seed oil with which to smear the leaves and trunks of trees. This is certain to attract hordes of moths. Then after sunset steal forth with dark lantern and net and secure the prey. A sport such as this suggests great possibilities of fun, and also of picturesque costumes; full skirts, high laced boots, to protect one from the dew and damp, and a small cap, being the most important points to be remembered in preparing such a toilette." —*Montreal Gazette.*

The above piece of newspaper entomology was sent to us by a valued correspondent who says :—

"Our favorite science is threatened with the danger of becoming a fashionable fad with suitable costumes." We hardly think the study of the Heterocera is in any danger and we would rather encourage the 'dear girls' in their pursuit, as we are sure some of them would become properly interested in the science. Even if they only destroyed the moths for sport they would be no worse than our economic friends, who kill them, that miserable farmers may have larger crops, which, of course, is a matter of no importance (except to the farmer).

THE LARGEST INSECT EGG.—It may be as surprising and as interesting to the readers of ENTOMOLOGICAL NEWS as it was to the writer to know that certain beetle eggs are as large as those of a humming bird.

Some time ago a letter was received from a correspondent in Barberton, South African Republic, about "the beetle which lays an egg as large as the humming bird egg." The writer replied, expressing some incredulity, and by return mail received a female specimen of the large Buprestid, *Sternocera orissa*. In the accompaning letter the correspondent said that the beetle had laid an egg in the cyanide bottle in which it was placed after capture, but that the egg had been lost. This statement seemed to render the matter still more incredible, but, upon dissecting the beetle, another fully developed egg was found, which, to our surprise, measured 9.2 mm. in length, by 6.4 mm. in transverse diameter. Its color was light reddish brown, and there was a beautiful reticulate sculpturing. None of the writer's associates had ever seen or heard of anything of the sort, nor could a reference to the egg of *Sternocera* be found. Mr. F. C. Pratt, an Englishman connected with the Department of Agriculture, and who was formerly employed by the British Museum, informed the writer, however, that he had seen something similar in the British Museum, and suggested that a letter to Mr. C O. Waterhouse might bring out the facts. A letter was, therefore, written to Mr. Waterhouse, who has very kindly and promptly replied that the large size of the eggs of *Sternocera* is well known to him and to certain German dealers who have offered them to the British Museum for sale. Mr. Waterhouse, however, is not aware of any record, except that Gory, in his monograph of the Buprestidæ, figures the egg of *S. chrysis*, the figures being 9 mm. in length. The eggs in the possession of the British Museum are said by Mr. Waterhouse to be those of *S. sternicornis* and are 7.5 mm. in length.

Thus the egg of *S. orissa* mentioned above is probably the largest insect egg of which any record has been made. The specimen has been deposited in the collection of the U. S. National Museum.—L. O. HOWARD, Washington, D. C.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

Proceedings of the Association of Economic Entomologists.—The Association met at Buffalo, N. Y., August, 21 and 22, with a good attendance of members present. The papers presented were all of general interest, and much discussion was had on the subjects presented. It was on the whole a very successful meeting, and beside the advantage derived from the discussions, the association of the members with each other, and the personal exchange of opinions was of the highest interest and value.

At the session held on the morning of the 21st, Prof. C. H. Fernald, the President, read his annual address, in which he treated of the "Evolution of Economic Entomology." He began by proving the importance of the matter in ancient times, and cited Pliny for a long series of suggestions, as to methods by which insect injury could be avoided. Some of these were decidedly interesting and he followed with a list of the recommendations made by subsequent writers including such invaluable and infallible methods as hanging the bones of a mare's head upon the paling surrounding the garden, or anointing them with the blood of lizards or similar materials. Later on insecticides began to be used, and among the first to be suggested was white hellebore boiled in milk. The importance of collecting specimens and of destroying them in their several stages began to be recognized quite early, and the importance of universal action was urged even in the earliest times. The rapid increase in knowledge within the last decade was briefly sketched, and it was urged that we should endeavor to secure uniform laws throughout the country to regulate the measures against certain kinds of insects to prevent their undue spread and harmfulness. Previous laws on the subject were also referred to; but these were cases where the insects themselves were actually cited into court to answer for the damage that they did, and if they failed to appear, which was usually the case, they were excommunicated. It was suggested that this kind of law had never produced any satisfactory effect, and the regulations to be now prescribed were rather such as would compel agriculturists to adopt reasonable methods to prevent spread and check injury.

Mr. L. O. Howard read a paper on "Some Temperature effects upon Household Insects." He stated that it is becoming the practice to preserve furs, valuable rugs and articles of clothing from the attacks of moths and the like by placing them in cold storage, and this method has proved to be absolutely effective in the past. The question has arisen, however, at what temperature should these articles be kept in order to insure them against danger from the pests, and yet not subjected to a temperature which largely increases the cost of storing them. Experiments were detailed covering a large number of insects, with the results about as follows:—as against the ordinary clothes moths, *Tinea* species, a temperature of 40 degrees is sufficient to prevent injury ; as against the species of *Attagenus* a temperature of 44 degrees is sufficient. The same temperature will serve against the species of *Trogoderma*. Against *Dermestes vulpinus* a temperature of 45 degrees will suffice. It seems, then, that a temperature from 40 to 42 degrees will be sufficient to check development in those insects that ordinarily infest household goods and clothing, and keeping them at a temperature below freezing simply increases the cost without adding anything to the benefit. It is suggested that it would be a good plan in every case, to treat the articles to be protected with super-heated steam to make certain that no life remains in them, at the time they go into the storage rooms. After that, a temperature of 40 degrees will be absolutely safe.

Mr. F. M. Webster gave the results of "A three years' study of an outbreak of the chinch bug in Ohio." By means of maps Mr. Webster showed the distribution of this insect for the three years last past. Prior to 1895 there could hardly be said to have been a chinch bug invasion in Ohio, although they had appeared to some extent the year previous. The invasion of 1896, however, though it was not a very serious one, was the worst which had ever visited them, and at least two farmers committed suicide on account of the losses they saw staring them in the face. The Station had made preparations for distributing the chinch bug disease on a large scale, and some 1200 applications were received and honored. The season of 1896 was an ideal one for the development of the disease and during the early part of the year it was also a favorable one for the spread of the chinch bug. That is to say, the weather early in the season favored the spread and effectiveness of the disease. The result was, that while injury to wheat was severe in some sections, yet injury to corn was almost entirely prevented. A curious point in the invasion was that it covered territory on the whole entirely different from that which was covered by the invasion of 1896, while this in turn covered counties which were not infested in 1894. Therefore, for three years last past, the chinch bug has infested each year different portions of the State ; although there are a few localities that have suffered two or three years in succession. Mr. Webster says as a result of his experiments and observations, that in a year like the present, when the weather conditions are favorable, the chinch bug disease will prove useful to a certain extent ; but he is also fully convinced that unless the weather conditions are favorable the disease is entirely unreliable. His results in this particular agreeing with those that had been reached by Prof. Forbes of Illinois.

Mr. Perkins stated that he had known the chinch bug to be injurious for five years in certain sections in Vermont. They cover only a small territory and were to be found there in troublesome numbers each year.

Mr. Hopkins stated that in 1895 the insect was a pest on wheat, oats and corn in one of the Virginia Valleys; but that he had had no complaints of it this year. Dr. Bethune said that the insect had been found in some numbers at Grimsby, Ontario; but was not troublesome. Mr. Howard said that he had some complaints of the insect from Virginia; but that these occurred during a period of wet weather, and he replied to the complainants that if their weather was anything like that at Washington, they need not fear the further spread of the insect or serious injury from them. No further complaints were received and he assumed that his predictions were verified.

(To be continued.)

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

IT may interest the readers of your valued ENTOMOLOGICAL NEWS, to hear that I obtained a pairing of *Attacus cecropia* ♂ with *Saturnia pyri* (the largest European moth) ♀; but eggs proved to be barren, which was quite a disappointment, as I expected to raise a new interfaunal hybrid.—HERMAN AICH, Elberfeld, Germany.

MEXICAN ALEURODES.—Mr. Maskell has lately published as new two species of *Aleurodes* from Mexico, which I sent him (Tr. N. Z. Inst., vol. xxviii.) As he has not cited all the particulars regarding the discovery of these insects I desire now to state that *A. nicotianæ* was found at Guanajuato, by Dr. Alfred Dugès; while *A. erigerontis* was taken by myself in 1893 at Escalon.—T. D. A. COCKERELL.

IN the Annales Belgique, 1896, vii, the following North American Buprestidæ are described by C. H. Kerremans:—

Taphrocerus texanus, p. 312, this is *T. agriloides* Crotch.
T. cylindricollis, p. 312, is *T. lævicollis* Lec.
Pachyschelus politus, p. 322, is *P. lævigatus* Say.
Brachys horni, p. 324, is *B. æruginosa* Gory.—GEORGE H. HORN.

A GENEROUS PROPOSITION TO NEWS SUBSCRIBERS.—I am willing to make translations of zoological, and particularly of entomological publications for the readers of the NEWS, from the French and German for a remuneration of twenty cents per hundred words and postage. The money obtained in this manner is to be expended by the NEWS in subscriptions for entomologists who cannot afford to pay the subscription fee ; or in some other way which will tend to increase the number of subscribers to the NEWS.—LUDW. B. GOLDHORN, 200 Hunter St., Sing Sing, New York.

Entechnia is a synonym of *Melitoma* Latr.

Pompilus maurus and *funereus* I find to be varieties of one species, belonging to the peculiar genus *Anoplius*. The female has only one ocellus.

Parapompilus differs from *Planiceps* only in number of submarginal cells ; it is *Micropteryx*, and its proper generic name is *Ferreola*. All North American species appear to be one.—W. HAMPTON PATTON, Hartford, Conn.

TO THE TUMBLE-BUG.

(BURNS.)

The cleanest corn that e'er was dight
May hae some pyles o' caff in ;
Sae ne'er a fellow creature's light
For random fits o' daffin !

Haith ! quat your wark, ye ill-bred bug !
Ye'll soon get smoor'd aboon your lug,
If mickle langer ye maun tug
At sic a rate ;
Howkin at yon auld midden drug
Wi' filthy pate.

Tis unco strange ye're hirplin there,
Sae hard at wark and fash't wi' care—
On every side, baith far and near,
Ilk bug's at play,
Hoyse then your wings and tak' the air,
And fly away.

Canna ye hear, this bonnie Spring,
How all around the lavrocks sing ?
And see ilk insect's bizzing wing
Blink in the ray ?
Hae ye nae note wi' them to bring,
And glad the day ?

Awa ! I say, ye glaikit beast !
And 'mang the dewy grass tak rest !
Hech ! warlike thoughts maun fill your breast
Wi' kindlin' ire,
Sin' now ye're rowin' up sae fast
Sic balls tae fire.

I'll stap, right glad to see ye fight,
If only fae ye had to smite;
Sae wark awa,' wi' a' your might,
  And weel prepare
Tae meet ilk bug that comes in sight,
  Wi' ye tae war.

Stap! whaur ye gau'n new sae fast?
Ye dinna think, ye little beast,
Alane tae row a ba' sae vast
  As that ye've made!
Haud! there's anither, come at last,
  Tae gie his aid.

Down wi' your butt, and tak your head,
Ye dousie beast! for much I dread
Ye'll brak your neck, or be mislead
  Some ither road—
An' if ye fa'—alake! ye're dead
  Beneath your load.

Get aff, I say, ye lazy bug!
Dinna ye see your brither tug,
And sweat, and push, while ye sae snug
  Ride like a skellum!
Jimp down, I say, ye misleared hog!
  And tak the helm.

Hae ye nae heart to help your mate,
And tak your share, and push the weight?
Then, tak that blow upo' your pate—
  'Twill gar ye feel,
And help, I ken, your brither's fate,
  Sae true and leal.

(E. E. HIGBEE, D.D., LLD.,
late Supt. Public Instruction, Penna.) "YORRICK," 1850.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be **limited to twenty-five** for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. **Please put date of capture and exact locality on each specimen.** Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the anatomy of insects, however, whether relating to American or exotic species will be recorded.

1. THE CANADIAN ENTOMOLOGIST, August, 1896.—New bees of the genera *Xenoglossa* and *Podalirius* (*Anthophora*), T. D. A. Cockerell.

19. TRANSACTIONS OF THE LINNEAN SOCIETY OF LONDON, Zoology, vi, 4.—The comparative morphology of the Galeodidæ, H. M. Bernard.

20. Species des Hymenopteres d'Europe et d'Algerie, T. v, pp. 545, et seq. This volume completes the Braconidæ.

21. ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, T. xl, 7.—New Trachydæ, C. Kerremans.

INDEX TO THE PRECEDING LITERATURE.

The number after each author's name in this index refers to the journal, as numbered in the preceding literature, in which that author's paper is published; * denotes that the paper in question contains descriptions of new North American forms.

THE GENERAL SUBJECT.

Henshaw 10.

MYRIAPODA.

Laurie 11, Pocock 18.

ARACHNIDA.

Cambridge 6*, van Hasselt 7, Causard 15, Bernard 18, 19, Pocock 18.

THYSANURA.

Harvey 10*.

ORTHOPTERA.

Scudder 1*, Morse 10 (two).

HEMIPTERA.

Kimball 2, Fowler 6*, Bianchi 14, Cockerell 17*.

COLEOPTERA.

Chittenden 1*, Knaus 2, Kuwert 5, Champion 6*, Blandford 6*, Faust 9 (four), Jordan 9 (two), Kolbe 9 (two), Eichhoff 12, Linell 12, Tschitscherine 14, Leng and Hamilton 16*, Gahan 18, Kerremans 21*.

DIPTERA.

v. d. Wulp 6*, Giglio-Tos 13*.

LEPIDOPTERA.

Grote 1 (two), 10, Heath 1, Holland 3, Walsingham and Hampson 3, Rickard 4, Weismann 4, Butler 4, 11, Rothschild 5, Warren 5, 11, Kheil 8, Dyar 10 (two), Godman and Salvin 3*.

HYMENOPTERA.

Cockerell 1*, Dunning 1*, Cameron 6*, Howard and Ashmead 12, Semenow 14, Ashmead 16*, Bingham 3, André 20.

Doings of Societies.

PHILADELPHIA, September 8, 1896.

A stated meeting of the Feldman Collecting Social was held at the residence of Mr. H. W. Wenzel, 1509 S. 13th Street.

Members present: Messrs. Bland, Boerner, Seiss, Castle, Trescher, Frank Hoyer, Albert Hoyer, Fox, Griffith, H. W. Wenzel and Schmitz. Honorary members: Dr. Henry Skinner and Prof. John B. Smith. Meeting called to order at 8.45 P.M., President Bland presiding. Minutes of the last meeting read and approved. Chairman of the Committee on Field Meeting reported progress.

Prof. Smith spoke of his recent trip to the Pacific coast and gave a brief account of the places visited, the collections examined and character of the localities. He spoke highly of California as a fruit-growing district and also as producing an immense variety of insect life. Collecting in California, however, must be understood before success can be obtained. The climatic conditions are so different from our own in the East that an experience gained in Pennsylvania or New Jersey is of little use in California. Especially is this true where collecting is done on the desert, because in such cases everything depends upon local conditions and upon the times when moisture can be obtained. Irrigation has made an immense difference in some parts of California, and it is odd to see on one side a flourishing citrus orchard of the most vivid green, while on the opposite side there is nothing but a dry desert with a scant growth of thorny or prickly vegetation.

At San Bernardino he examined the collection of Mr. W. G. Wright, who has gathered together a very interesting series of butterflies, containing many examples of rare species. There is also a vast amount of material in Coleoptera in bottles and jars that undoubtedly contain much of value. Mr. Wright has been a diligent collector, and is perhaps as well acquainted as any one with the peculiarities of desert insect fauna.

At Pomona he saw the collection of Prof. H. C. Fall, which was surprising in its excellence and extent. It is perhaps the best collection of Coleoptera in California, and very largely the result of Mr. Fall's own diligent collecting. The specimens are not only numerous, but they are in exceedingly good condition, and the collection will compare favorably with some of the best of those in the East.

At San Francisco, the California Academy of Natural Science is gradually accumulating an exceedingly good collection of insects, and our old friend, Mr. Carl Fuchs, is in charge of the coleopterological portion of it. He is also making a collection to illustrate the different orders of insects, and has done a very great amount of work on this series. Many of the specimens in the collection are types of species described from Lower California, and these are treated with extreme care. Every specimen is carefully mounted, and with every specimen is associated a number which refers to all the details known of the specimen, where it was collected, when, by whom determined, and whatever facts of interest may be connected with it. The labels of the various specialists who have had the insects are most carefully preserved and placed on the pin with the insect itself. In this way it seems hardly possible that any mistake could occur as to the type of any of the species recently described from Lower Californian collections. Prof. Smith mentioned certain other collections, and spoke in high terms of the beautiful collecting grounds in the immediate vicinity of San Francisco.

During the evening Prof. Smith handed the members a bottle of beetles, also a number of *Polyphylla crinita* Lec. from Alameda County, California, which were kindly donated by Mr. Fuchs.

Dr. Griffith exhibited three boxes of material collected by Mr. Johnson and himself recently on their tour from Washington, D. C., to Popes Creek on the Potomac, stating that the Coleoptera were taken by himself, while the Diptera represented Mr. Johnson's collecting; he further said that this represented a geographical distribution of the localities visited.

Dr. Skinner spoke of his recent trip to the mountains of east Tennessee and western North Carolina. Owing to the altitude, the fauna really represented that of Canada, the only representative of the fauna of the South of any importance being *Argynnis diana*, which he had the pleasure of taking. *Cychrus* were diligently searched for, but none found ; this may have been on account of being too late in the season for them (August 14 to September 4.)

It was moved by Mr. Wenzel, seconded by Mr. A. Hoyer and carried, that the Social extend a hearty vote of thanks to Mr. Carl Fuchs for his donations to the members. Further, after listening to the statement made by Prof. Smith, the Social was unanimously of the opinion that the work done by Mr. Fuchs in the California Academy of Science is of the highest interest and greatest importance. From a scientific standpoint it is a necessity, and the Academy is to be congratulated upon having a man so well able to do it as Mr. Fuchs. His work will not only benefit present students, but will form a basis upon which future study of the species now arranged may rest.

No further business being presented the meeting adjourned to the annex. THEO. H. SCHMITZ, *Secretary.*

The Entomological Section

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF MEETINGS.

The following paper was read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS:

THE SEVENTY-SECOND PERDITA.

By T. D. A. COCKERELL.

Perdita maculigera n. sp. ♂.—Length 5 mm., pale primrose-yellow with black markings. Head fairly large, subquadrate, broader than long ; cheeks unarmed, with a beard of white hairs beneath ; eyes pale pea-green ; antennæ yellow beneath, black above ; head yellow with these black markings,—the usual anteorbital dots, a large irregularly square black patch above each antennæ, sending a line from its inner upper angle to the middle ocellus, a patch connecting the ocelli, an obliquely placed large oval spot, touching and sending a very narrow line along the orbit, barely separate from the lateral ocelli, and the black occipital region. Thorax yellow with these black markings,—a transverse mark on collar, a small mark on tubercles and a small mark just below, a large basal patch on pleura and a streak beneath the wings, the mesothorax except the lateral margin and a pair of longitudinal yellow stripes, the scutellum except the hind margin irregularly, the postscutellum, and the dorsum of metathorax except a large yellow patch somewhat trifid behind; tubercles colorless with an opaque yellow spot. Wings hyaline, iridescent, nervures brown; stigma very peculiar, its basal portion colorless and hyaline, the rest intense black, forming a large nearly, round spot. Marginal cell rather short, its postigmatal portion much the largest, the substigmatal part very short, owing to the rounded end of the stigma; third discoidal distinct ; second submarginal large, narrowed half or more to marginal. Legs yellow, anterior coxæ tufted with white hairs, anterior femora and tibiæ with a black stripe behind, middle femora and tibiæ similarly striped, and a black spot near end of middle femora in front, hind coxæ with a black dot near apex, hind femora with a broad obligue black stripe, commencing behind and ending on the front, hind tibiæ black without, hind tarsi blackish. Abdomen narrow, subcylindrical, curved, base of first segment black, connecting by a black median line with the first of five broad bands; the first of these bands is uniformly black; the second, third and fourth are divided transversely by a yellow streak, and the third and following ones become dark brownish instead of black; the apical portion of the abdomen presents four black spots, the upper pair united by a brownish line; venter yellow without markings.

Hab.—Las Cruces, New Mex., on narrow-leafed willow, May 2, 1896, in company with *P. salicis.* Nearest to *P. punctosignata*, but quite distinct. The bicolored stigma is very peculiar and unique in the genus.

OBITUARY.

On Sunday morning, August 9th, at 1 A. M., Mr. HENRY F. SCHOENBORN died at the City of Washington, D. C. Mr. Schoenborn was well known to most of the older collectors of Lepidoptera, and those who have had the pleasure of visiting him at his home in Washington have seen not only a very good local collection, but have received a hearty welcome.

Mr. Schoenborn was born Dec. 31, 1833, at Suhl, Thuringen, Germany, and twenty years later, on June 6, 1853, he came to the United States and settled at Washington. With a love for nature, inborn, he soon began making collections, and started in Entomology somewhere about 1865. Since that time his collections has grown continuously, and Mr. Schoenborn has succeeded in getting together a great many interesting and rare species. He was always liberal with his material, and would give freely of such duplicates as he had. His collection contains quite a number of rarities and a few types, principally of Noctuidæ described by Henry Edwards and J. B. Smith. He had been for some years a sufferer from asthma, and during the past year or two Bright's disease of the kidneys had been slowly sapping his strength. The collection was not disposed of by will, and we understand that the widow is holding it for sale.

Miss GEORGIANA ELIZABETH ORMEROD, F. E. S., died at St. Albans, Herts, England, on August 19, aged 73. She was a sister of Miss Eleanor A. Ormerod, the writer on economic entomology, and was elected a Fellow of the Entomological Society of London in 1880.

Dr. EDWARD EPPELSHEIM, coleopterist, died at Germersheim, Germany, on June 6, 1896. He was born in 1837.

ENTOMOLOGICAL NEWS for September was mailed August 27, 1896.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. VII. NOVEMBER, 1896. No. 9.

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COCOON HUNTING IN THE FALL.

By One of the Boys.

Our illustration of the *luna* moth carries us back to the days when we searched for cocoons among the fallen leaves and enjoyed the glorious Autumn weather and the ever beautiful tints of nature shown at this season of the year. There were three of us—all school boys and enthusiastic young naturalists—and we eagerly looked forward to Saturdays when we would have a holiday and hoped that it might not rain so that our expedition after cocoons could be undertaken. With our pockets full of beef sandwiches and a supply of potatoes and matches we sallied forth. The *luna* cocoon we were anxious to get, as it is not common, and for the tyro not an easy thing to find. The height of our ambition was *angulifera*, as we had already found *promethia*, *cecropia* and *cynthia*, but by no means despised *polyphemus*, which we found suspended, but never very many in a single hunt. *Cynthia* was common on the *Ailantus* trees in the city, and by fastening a penknife to a pole, so that we could cut and hook them off, we always had a plentiful supply of the species. We easily found *promethia* by looking for the apparently curled and dried leaves on the spice-bush and sassafras and soon learned to detect cocoons and differentiate them from curled leaves at a glance. As we gained more experience and our eyes became sharper we could also detect *luna* and *angulifera* from the dried leaves on the ground under the hickory, persimmon and black-walnut when hunting for the former, and while looking under tulip-poplars for the latter. We also found *luna* under sweet-gum, but did not spend any time on its less common food-plants. Industry, patience and sharp eyes will enable any boy or girl to find these species after they fall to the ground with the leaves. Usually, however, the full-grown caterpillar crawls to the ground and will spin among the leaves between the earth and the bark just at the top of the ground or alongside of a stick or a piece of bark. *Cecropia* often has a habit of spinning on the elder stalk close to the ground.

There was a fascination about these tramps, and they gave us keen enjoyment. When noon arrived we were desperately hungry and sat around our fire toasting our fingers and roasting the potatoes and chestnuts. We did not confine our attention solely to insects. but enjoyed all nature. Minerals were collected and plants and animals observed. We usually returned home tired, but happy and enjoying our treasures and waiting with impatience for our cocoons to disclose their beautiful imagos.

———o———

NOTES ON EUROPEAN ENTOMOLOGICAL COLLECTIONS.

By Philip P. Calvert.

VII.—GENOA.

The Museo Civico di Storia Naturale di Genova is situated on an eminence in the public park, known as the Villetta di Negro, and commanding a view of that picturesque harbor which has won for the city the title of "La Superba." The Director is the Marchese Giacomo Doria, the Vice-director Dr. Raffaello Gestro, well known also as an authority on Coleoptera. Signor Leonardo Fea, the explorer of Burmah, is Assistant, especially in Entomology, and Signor Filippo Silvestri occupies himself with Myriapoda. Shortly after the writer's visit to the Museum, and at his request Dr. Gestro most obligingly furnished an account of the entomological collections which it contains, and of which what follows is a translation.

GENERAL.

The collection of the Museo Civico di Storia Naturale di Genova is chiefly rich in Coleoptera, and is certainly richer than that of any other Museum in Italy. It had its origin in the material collected in Persia and in Borneo by the Marchese Giacomo Doria, and in a short time has attained an extraordinary development. To this has been added :

The collection of Carabidæ of Count Castelnau, purchased by the Marchese Giacomo Doria.

The collections of:—O. Beccari from the Sunda Islands and from New Guinea;

L. M. d'Albertis from New Guinea and Northern Australia;

O. Beccari, O. Antinori and V. Ragazzi from Abyssinia and Erythraea;

Marchese Giacomo Doria from Tunis;

L. Fea from Burmah and Tenasserim;

E. Modigliani from the islands of Nias, Engano, Mentawei and Sumatra;

Dr. L. Loria from southern New Guinea;

G. Bove from the Congo, Terra del Fuego and the Argentine Republic;

L. Balzan from Bolivia;

Bricchetti-Robecchi, v. Bottego and E. Ruspoli from Somalia.

These materials have acquired particular importance from their having been examined and described* by specialists, consequently the number of types contained in this Museum is very considerable.

The collection of insects from Burmah, made by Signor L. Fea, principally of Coleoptera, possesses the greatest importance from the number and variety of the species and from the great quantity of types which it contains. It is kept separate from the others.

Worthy also of particular mention is the collection of cave-dwelling insects, which presents extraordinary interest from the species recently discovered in the grottos of Liguria.

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* Chiefly in the Annali del Museo Civico di Storia Naturale di Genova, now (September, 1896) in its thirty-seventh (seventeenth of the second series) volume. See the notices of Entomological Literature in this and the preceding volumes of the NEWS.—P. P C.

COLEOPTERA.

Predominant among the Coleoptera, from their number and importance, are the species from the Malay Archipelago, from Papua and from Erythraea.

The families most richly represented are the following:

Cicindelidæ.

Carabidæ: Castelnau's collection and numerous types of Castlenau, Putzeys and Chandoir.

Dytiscidæ, and especially Gyrinidæ, with many types of Regimbart.

Staphylinidæ: types of Fauvel and Eppelsheim.

Pselaphidæ and Scydmænidæ, very rich.

Histeridæ: numerous types of Marseul, Lewis and Schmidt.

Cetonidæ: the Lomaptera group with types of Gestro.

Buprestidæ: many types of Kerremans and of Gestro.

Elateridæ: numerous types of Candèze.

Chrysomelidæ: types of Chapuis, Baly and Jacoby. The tribe of the Hispinæ is rich in Austro-Malayan species with many types of Gestro.

LEPIDOPTERA.

Species from the collections above cited as from New Guinea and described by C. Oberthür.

DIPTERA.

Various types of Rondani.

HYMENOPTERA.

The collection made by the Marchese G. Doria in Tunis and in Liguria is very rich; that of Formicidæ described by Mayr and Emery is of great value.

RHYNCHOTA.

Collection of P. M. Ferrari, composed principally of Ligurian species.

Among those from Papua, the Moluccas and the Malay Archipelago are many types of Signoret, Lethierry, Bergroth and Montandon.

ODONATA.

Those collected in Burmah by L. Fea, in Sumatra and other islands above mentioned by Dr. E. Modigliani, in New Guinea by O. Beccari and L. M. d'Albertis, and by the Italian expedition to Equatorial Africa, all described by Baron E. de Selys-Longchamps.

Species from Erythraea by V. Ragazzi.

The arranged collection of Coleoptera is contained in glass-topped drawers 28 x 37 centimetres, that of Lepidoptera and of Odonata in drawers 38 x 49 centimetres. The species are disposed in horizontal series with numerous specimens from many localities. Each specimen has a small pin-label bearing the names of the locality and collector and the date of capture. The types are distinguished by a pin-label. Labels for generic names are of different color from the others. Labels for specific names are white with a border variously colored according to the various parts of the world, and there is a special color for the Italian fauna.

Each specific label [on the bottom of the drawer] has a number which corresponds to a catalogue-slip on which are enumerated the specimens of each species with their respective localities and any other observations.

To these notes of Dr. Gestro may be added a few additional particulars from memoranda made by the writer at the time of his visit. In those parts of the collection which have been most recently arranged the specific labels of type specimens are written in red ink to more readily distinguish them. Labels for generic names have a black line-border, while the colors of the line-borders on the labels for specific names are green for North and South America, blue for Africa, yellow for Europe, red for Italy, violet for Australia and orange for Asia.

The Museo Civico di Storia Naturale di Genova is of comparatively recent origin and the building which it occupies is yet small, but it is the very modernity of this Museum, like that of the Musée d'Histoire Naturelle at Brussels,* which has made it possible to so carefully mark and catalogue each individual specimen, a task which the absence of data often renders impossible, or of doubtful value, in many of the older European entomological collections.

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* See the NEWS for April, 1896, p. 97.

ADDITIONAL LIST OF INSECTS TAKEN IN ALPINE REGION OF MT. WASHINGTON.

By ANNIE TRUMBULL SLOSSON.

The NEWS (vols. v and vi) contains already three lists of insects taken by me in 1893, '94 and '95 on the summit of Mt. Washington. During two visits made to the mountain this present season, 1896, I captured over 260 species in the different orders, not included in my previous lists. Among these are several new species and others not hitherto recorded from this country. I am greatly indebted for assistance in preparing this list to Messrs. Coquillett, Liebeck, Davis, Ashmead, Fox, MacGillivray, Van Duzee, Aldrich and others.

COLEOPTERA.

Carabidæ.

Amara obesa *Say.*
Platynus sordens *Kirby.*
" bogemanni *Gyll.*
Harpalus herbivagus *Say.*

Dytiscidæ.

Hydroporus dichrous *Melsh.*
Coptotomus interrogatus *Fab.*

Gyrinidæ.

Gyrinus borealis *Aube?*
Dineutes nigrior *Roberts.*

Hydrophilidæ.

Helophorus angustulus *Mann.*
Philhydrus perplexus *Lec.*
Creniphilus digestus *Lec.*
Sphæridium scarabæoides *Linn.*
Cercyon anale *Payk.*
" pygmæum *Ill.*
Cryptopleurum minutum *Fab.*

Silphidæ.

Necrophorus vespilloides *Hbst.*
Clambus gibbulus *Lec.*

Pselaphidæ.

Ctenistes piceus *Lec.*

Staphylinidæ.

Quedius lævigatus *Gyll.*
Listotrophus cingulatus *Grav.*
Xantholinus obsidianus *Melsh.*
Stenus flavescens
Tachinus parallelus *Horn.*
" canadensis *Horn.*
Mycetoporus lucidulus *Lec.*
Oxyporus lateralis *Grav.*
Oxytelus sp. ?
Anthobium convexum *Fauv.*

Trychopterygidæ.

Trychopteryx aspera *Hald.*

Corylophidæ.

Sacium lugubre *Lec.*

Coccinellidæ.

Adalia frigida *Schn.*

Colydiidæ.

Lasconotus borealis *Horn.*

Cucujidæ.

Pediacus fuscus *Er.*

Cryptophagidæ.

Atomaria sp. ?

Nitidulidæ.

Carpophilus brachypterus *Say.*
Epuræa erichsonii *Reit.*
" immunda *Sturm.*
Nitidula rufipes *Linn.*
Ips vittatus *Say.*
Rhizophagus remotus *Lec.*

Byrrhidæ.

Byrrhus americanus *Lec.*

Elateridæ.

Microrrhagus subsinuatus *Lec.*
Megapenthes stigmosus *Lec.*

Lampyridæ.

Calopteron reticulatum *Fab.*

Cleridæ.

Trichodes nuttalli *Kirby.*

Cerambycidæ.

Hylotrupes ligneus *Fab.*
Rhagium lineatum *Oliv.*
Pogonocherus mixtus *Hald.*
Acanthocinus obsoletus *Oliv.*

Chrysomelidæ.

Donacia flavipes *Kirby.*
Hypolampsis pilosa *Ill.*
Haltica ignita *Ill.*

Melandryidæ.

Tetratoma tessellata *Melsh.*
Serropalpus barbatus *Schall.*
Orchesia gracilis *Melsh.*
Canifa pallipes *Melsh.*

Anthicidæ.

Anthicus scabriceps *Lec.*

Curculionidæ.

Sitones flavescens *Melsh.*
Apion sp. ?
Anthonomus signatus *Say.*
Anthonomopsis mixtus *Lec.*

Anthribidæ.

Gonotropis gibbosus *Lec.*
Eurymycter fasciatus *Oliv.*

DIPTERA.

* Lestremia leucophæa *Meig.*
Sciophila bifasciata *Say.*
" hirticollis *Say.*
" obliqua *Say.*
* Boletina sciarina *Staeg.*
Neoglaphyroptera winthemii *Leh.*
Rhymoza filipes *Lw.*
Dynatosoma pinguis *Lw.*
Sciara vulgaris *Fitch.*
Sciara ochrolabis *Lw.*
" abbreviata *Walk.*
Simulium invenustum *Walk.*
Dilophus breviceps *Lw.*
Chironomus aterrimus *Meig.*
" brunneus *Walk.*
" variabilis *Staeg.*
Tanypus annulatus *Say.*
" monilis *Linn.*
" n. sp.
Psychoda minuta *Bks.*
Erioptera chlorophylla O. S.
" caloptera *Say.*
Tipula angulata *Lw.*
" centralis *Lw.*
Rhyphus fenestralis *Scop.*
Asilus notatus *Wied.*
Microphorus n. sp.
Rhamphomyia gracilis *Lw.*
" setosa *Coq.*
" expulsa *Walk.*
Hilara trivittata *Lw.*
Saucropis superbiens *Lw.*
Gymnopternus frequens *Lw.*
Chilosia occidentalis *Willst.*
Melanostoma angustata *Willst.*
Chrysochlamys nigriceps
Syrphus umbellatarum *O. S.*
Sericomyia militaris *Walk.*
* Chalarus n. sp.
Pipunculus cingulatus *Lw.*
Hyalomyodes triangulifera *Lw.*
Admontia degeerioides *Coq.*
" floridensis *Town.*
Gymnopareira pilipennis *Fall.*
" n. sp.
Limnophora refusa *G-T.*
Hyetodesia abacta
" pylone *Walk.*
Anthomyia radicum *Linn.*
Scatophaga intermedia *Wied.*
Tetanocera costalis *Lw.*
Psila levis *Lw.*
Chyliza notata *Lw.*
Calobata pallipes *Say.*

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* "Not before recognized from America," D. W. Coquillett.

Chætopsis ænea *Wied.*
Lonchæa nigra *Wied.*
" rufitarsis *Macq.*
Sapromyza 4-lineata
Scyphella flava *Linn.*
Octhera mantis *DeG.*
Scatella stagnalis *Meig.*
Phortica n. sp.
Crassiseta costalis *Lw.*
" formosa *Lw.*
Oscinis pallipes *Lw.*
" coxendix *Fitch.*
Siphonella lævigata *Fall.*
Chlorops obesa *Fitch.*
" variceps *Lw.*
Lobioptera indecora *Lw.*
Leucopis simplex *Lw.*
Odontocera dorsalis *Lw.*
Limosina limosa *Fall.*
Phora fasciata *Fall.*

HYMENOPTERA.

Tenthredinidæ.

Trichiosoma triangulum *Kirby.*
Lyda slossonia *MacG.* n. sp.
" borealis *MacG.* n. sp.
Xiphydria alternata *Nort.*
Euura sp.
Pteronus integer *Say.*
" sp.
" sp.
Pachynematus pubescens *Marlatt.*
" extensicornis *Nort.*
" montivagus *Marlatt*
Lygæonematus erichsonii *Hartig.*
Pachyprotasis omega *Nort.*
Tentredo cinctitibiis *Nort.*
" inconspicua *MacG.* n. sp.
" verticalis *Say.*
" secundus *MacG.* n. sp.
" variegata *Nort.*
" signata *Nort.*

Cynipidæ.

Synergus lana *Fitch.*
Eucoila rubripes *Ashm.*
Anacharis marginata *Prov.*

Evaniidæ.

Aulacus sp. ?

Ichneumonidæ.

Ichneumon caliginosus *Cr.*
" feralis *Cr.*
" humilis *Prov.*
" sagus *Cr.*
" tumidifrons *Cr.*
Amblyteles indistinctus *Prov.*
Phæogenes exiguus *Cr.*
" n. sp.
Phygadeuon lechevallieri *Prov.*
" n. sp.
Cryptus limatus *Cr.*
Hemiteles utilis *Nort.*
" n. sp.
Stiboscopus mandibularis *Prov.*
Alexeter canaliculatus *Prov.*
Notomiris glabrosus *Davis*, n. sp.
Clepsiporthrus flavidus *Davis*, n. sp
Diaborus maculiventris *Ashm.*
Pimpla annulipes *Brulle* [n. sp.
Polysphincta erythropleura *Ashm.*,

Braconidæ.

Bracon suborbicularis *Ashm.*
" trifolii *Ashm.*
Chelonus electus *Cr.*
" fessus *Prov.*
Apanteles carpatus *Say.*
" cinctus *Prov.*
" xylina *Say.*
Microgaster carinata *Pack.*
Meteorus politus *Prov.*
Ameoplus terminalis *Ashm.*
Helcon occidentalis *Cr.*
Aphidius obscuripes *Ashm.*

Chalcididæ.

Haltichella xanticles *Walk.*
Eurytoma bolteri *Riley.*
Megastigmus slossonæ *Ashm.*
Torymus ostensackenii *Ashm.*
Habrocytus thyridopterygis *Ashm.*
Rhopalicus triangularis *Ashm.*
Isocratus vulgaris *Walk.*
Pathyneuron altiscuta *How.*

Cryptophrymus coxalis *Ashm.*
Tridymus citripes *Ashm.*
Bothiathorax peculiaris *How.*
Eupelmis acaudus *Ashm.*
Tetrastichus sp. ?

Proctotrypidæ.

Megaspylus ambiguus *Ashm.*
Telenomus podisi *Ashm.*
Hoplogryon monticola *Ashm.*
Scelio opaca *Prov.*

Pompilidæ.

Pompilus tenebrosus *Cr.*

Pemphredonidæ.

Pemphredon concolor *Say.*
Passalæcus n. sp.

Crabronidæ.

Crabro pedicillatus *Pack.*

Eumenidæ.

Odynerus sp. ?

Andrenidæ.

Prosopis antennata var. ?
Halictus sp. ?

Apidæ.

Megachile montivagus *Cr.*

NEUROPTERA.

Chloroperla marginata *Bks.*
Hemerobius disjunctus *Bks.*
Psocus sp. ?

LEPIDOPTERA.

Heterocera.

Platarctia hyperborea *Curt.*
Dasychira rossii *Curt.*
Clisiocampa americana *Harr.*
Leucania impuncta *Harv.*
Sicya macularia *Harr.*
Corycia semiclarata *Walk.*
Petrophora prunata *Linn.*
Scoparia centuriella *S. V.*
Crambus sp. ?
Pyralid ?
" ?
Tortricid ?

PHYSOPODA.

Thrips sp. ?

HEMIPTERA.

Heteroptera.

Sciocoris sp. ?
Banasa dimidiata *Say.*
Cymus claviculus *Hahn.*
" luridus *Stal.*
Lygæus kalmii *Stal.*
Camptobrochis grandis *Uhl.*
Capsid ?
" ?
Triphleps insidiosus *Say.*
Coriscus sp. ?
Pygolampis pectoralis *Say.*

Homoptera.

Encheopa binotata *Say.*
Telamona reclivata *Fitch.*
Carynota marmorata *Say.*
Stobæra tricarinata *Say.*
Idiocerus provancheri *VanD.*
Bythoscopus fenestralis *Fitch.*
" variabilis *Fitch.*
Cicadula variata *Fall.*
Typhlocyba bifasciata *G.* and *B.*
" querci *Fitch.*
" sp. ?

ARACHNIDÆ.

Araneæ.

Pardosa montana *Em.*
Pisaura undata *Htz.*
Micaria montana *Em.*
Phidippus sp. ? (young).
Drapetisca socialis *Blk.*
Cornicularia sp. ?
Tmeticus sp. ?
Dyctina sublata *Htz.*

THYSANURA.

Isotoma viridis *Bour.*
" " riparia *Nic.*
[the I. sp. of former list]
Isotoma glauca montana *MacG.*
[the I. sp. of former list]
Tomocerus sp. ?
Schoturus sp. ?

A SUMMER TOUR IN THE DARK CONTINENT.

By Prof. ANGELO HEILPRIN.

(In Philadelphia *Public Ledger*.)

" In my first letter the fact was broadly stated that the dirt and filth of Tangiers did not come up to my expectations, a disappointment that was more pleasant than otherwise. Some parts of the city were in fact strikingly clean, and I am not sure but there are a number of areas of equal population in both New York and Philadelphia which would compare unfavorably with very nearly the worst parts of this city of the Moors. I had brought with me a generous supply of insect annihilators and irritants, but to this day, after making a goodly round of territory, the packet remains in the same condition as when it was put up in Philadelphia—one of the impedimenta of travel yet to be proved a non-surplus.

" Thus far I have not seen a flea or associate insect of any kind: that they are around and about may be taken for granted, but it is, nevertheless, a consolation to the traveler, and certainly conducive to his happiness, that they take a different route—at least they did in our case--from that which he travels. Of mosquitoes we have both seen and heard, but also in very emaciated numbers, and not sufficiently to require the assistance of the great net which I had prepared for their reception. Altogether the insect fauna has proved itself strikingly deficient, and, had one in mind the object of collecting for a museum of natural history, the result would surely be disappointing. Large ants here and there speed merrily along the roadway or crawl through what might properly be called an apology for luxuriant grass, but they are neither larger nor more ferocious than the common mountain ant of Pennsylvania, nor did they appear in the numbers of the latter species. Of centipedes we have not seen a trace. Thus it would seem that the question of vermin need not *necessarily* enter into the calculations of a journey into Morocco. That the experiences of others have been very different from our own is quite certain, and that they will continue different for still others in the future is equally certain, but I state the simple facts as they came to us, as they doubtless will come to others who follow in our footsteps."

ABERRANT FORM OF MELITÆA COLON Edwards.

By B. L. CUNNINGHAM, Fort Klamath, Oregon.

Expanse 50 mm.; antennæ 9 mm., yellow. Fore wing, upperside, black; a row of red spots cross the wing on the border as in the type of this species; one large yellow tinged white spot at end of cell and one smaller in the middle of cell; also a row of whitish yellow spots inside border row. Hind wing, upperside, all black, except a row of red spots along the edge. Front wing, lowerside, ground color red; a row of six black crescents crossing wing 4 mm. from the edge. In the central cell the cross-lines have been wonderfully changed. On the right wing, commencing at the left, these lines have been changed to letters, as follows: **I H S**. These letters are coal-black and show up *distinctly* on the red "back ground." On left wing these letters are reversed, but are just as distinct. We are all familiar with the Latin words, "Jesus Hominum Salvator" (Jesus, the Savior of Men), and the abbreviation of these words, I. H. S., appearing on the wing of a butterfly is to me a wonderful thing, and worthy of note.

Hind wing, lowerside, black; a row of red spots along border, followed inside by a black band, then another row of red spots, followed in turn by another wider band of black; inside of this the red patch of *colon* proper has been broken into spots surrounding four black spots. The base of the wing is black; veining all black.

It will be seen from this that *all* the white on the lowerside has been turned to black, and also that it has turned to black on the upperside of hind wing, and that the upperside of the front wing has lost most of its red spots and some of its white ones. It is a very unique specimen, and is now in the museum at Tring, England, where the gentleman, to whom I sold it, placed it for safe keeping. It was captured at an altitude of 4300 feet, a few miles from Fort Klamath, Oregon, in July, 1893; at that time there were a few snow banks among the small pines where there was little or no sunshine; possibly the pupa from which this fly hatched was under one of these snow banks, and the colors changed by the action of the cold. The color of the antennæ is also changed from normally red or brown to yellow.

I have taken three aberrant *Melitæa*, one *colon*, one *rubicunda* and one of which I do not know the name. I have also taken two aberrant *Argynnis*, both *erinna*, one of which was described by Prof. Owen in the NEWS (vol. iv, p. 246), but none of which were so curious as this *colon*, which is a ♂.

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., NOVEMBER, 1896.

THE financial depression of the past two years has been universally felt, and journals devoted to entomology are perhaps no exception. Former subscribers have written us that they really could not afford to pay our small subscription price as they needed every cent for absolute necessities. We feel this all the more, as in the past every penny of surplus has gone into improvements, increased number of pages and illustrations. We hope our friends will do their utmost to help swell our subscription lists as we would dislike to raise the price of the NEWS, and are willing to give a two-dollar journal for a dollar if we possibly can. We want an "honest dollar" in return, and after the "gold bugs" and the "silver bugs" have had their fracas and decided on the supremacy of one or the other, we hope ordinary every-day insects may settle down to a comfortable prosperity.

TERMITES bored through the lead pipe and the cotton and jute insulating envelope enclosing the Tonkin cable in less than a year. M. Bouvier, who has investigated the matter and reported on it recently to the Académie des Sciences, recommends that the cotton and jute be steeped in a solution of sulphate of copper as a protection.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

(Continued from page 247.)

Proceedings of the Association of Economic Entomologists.—Mr. A. H. Kirkland gave some "Notes Concerning Insecticide Experiments." He spoke particularly of arsenate of barium, with which they had experimented in Massachusetts for the first time this year, and in his opinion it is the best arsenical compound that has been yet used against the Gypsy moth. Some remarks were made upon this insect and the chemical and other tests upon the nature of its digestive secretions, the object being to ascertain, if possible, why arsenite in the ordinary forms exercised so feeble an effect upon this insect. It was from the information thus obtained that the arsenate of barium was tried, and it seems to have been successful. The substance is not yet in shape for recommendation in ordinary use, and the method of preparing it is somewhat complicated.

Afternoon Session.—Mr. C. L. Marlatt spoke of "Comparative Tests with new and old Arsenicals on Foliage and Larvæ." As illustrating the importance of the matter Mr. Marlatt stated that at the present time 2000 tons of Paris green per year were sold for insecticide purposes! He detailed a series of experiments with Scheeles' green, the plain arsenate of copper, Paris or Schweinefurth's green, or aceto-arsenite of copper, with London purple, with arsenate of lead and with arsenite of lead. The effect of the addition of lime to these materials was discussed and was generally found to be beneficial. Mr. Marlatt seems to favor the arsenite of lead, a preparation not heretofore used as against insects and not commercially manufactured on a large scale. He also urges the use of the simple arsenite of copper or Scheeles' green in place of the ordinary Paris green. It contains quite as much arsenic, but is very much more finely divided, remains in suspension much better, can be more completely distributed, and is more rapidly effective. Further, it is very decidedly cheaper, and this is a matter of very considerable importance to the farmer. Mr. Marlatt further suggested that it was not always possible to judge of injury caused by the arsenites immediately after their application. In some cases no immediate effect was perceptible, and it was not until days or weeks afterward that evidence of the action of the poison upon the leaves became obvious. It usually resulted in a premature maturing on ripening of the foliage. This paper was discussed by a number of the members, principally in the direction of questioning Mr. Marlatt and in recounting experiences bearing out or contradicting his statements. The most interesting point was the assertion by Messrs. Kirkland and Forbush, that the addition of lime rather increased injury to foliage in their experiments, and certainly did not prevent it as compared with the application of the pure arsenite. This seemed to be contrary to the general experience, and it was suggested that these might be due to the fact that an excess of lime was used which resulted in disintegrating the poison instead of simply neutralizing the free arsenic.

Mr. Howard read a paper on "The Futility of Trunk and Crown Washes for the Elm Leaf Beetle." In New Haven, during the season of 1895, the kerosene emulsion was made on a large scale by the city authorities, and was given away to all who applied for it, for the purpose of washing the trunks of their trees, to kill larvæ and pupæ of the Elm Leaf Beetle. The same material was also applied at the base of the tree to kill the pupæ, which were usually found there in very considerable numbers. In order to examine what effect this method of treatment has produced, Mr. Howard examined the state of affairs in New Haven during the present year, and found that absolutely no good effect had been produced, but that by spraying protection could be obtained. In some cases he found handsful of pupæ and larvæ ready to pupate in the crotches of trees, and he detailed a series of observations to prove that the larvæ by no means all descened the trunks of the trees to pupate at the base. In his opinion they drop from the branches and from the leaves and pupate everywhere on the surface of the ground, or wherever else they can find shelter. He believes that only the smallest proportion of the larvæ descend the trunk and come to the base of the tree, and, while destroying those that do come there, is of course a good practice, yet it will not have sufficiently beneficial result.

Mr. C. L. Marlatt read a paper on "Insecticide Soaps." He rehearsed the difficulties in finding what sort of material was used in what was called Whale Oil Soap, and his efforts to induce manufacturers to make a really good article for a reasonable price. A large proportion of the soaps on the market apparently contain very little, if any, fish oil, and failures are apt to result from the use of materials of this kind. Among the requirements of a satisfactory soap is that it should be uniform, that it should remain liquid when dissolved in water, and should not jelly when cold at a strength of two or three pounds in one gallon of water. Very few of the soaps on the market fulfill these conditions, although several that were made for him proved satisfactory. The Leggett soap answered all the requirements. Mr. Marlatt urged attempts to obtain the manufacture of a soap of uniform and reliable strength at a price reasonable to both manufacturer and consumer. In the discussion that followed the general question of the action of insecticides was taken up and also the susceptibility of insects to poisons.

Mr. Lintner, speaking to Mr. Howard's paper, reasserts his belief in the usefulness of trunk and crown washes, and is not yet convinced that much the largest proportion of larvæ do not crawl to the trunk and down it to pupate. He repeated certain observations made by him tending to show that the larvæ do not drop from the branches voluntarily, or under ordinary circumstances. He does not believe that Mr. Howard's observations quite prove his case. In the matter of the spread of the insect it has invaded new parts of Albany and has extended north of Troy for some distance. There is no doubt that at Albany there are two distinct broods of the insect.

Mr. Smith stated that his observations and conclusions rather agreed with those of Mr. Howard, and as to the number of broods he had repeated his observations at New Brunswick during the present year and can find only a single brood. In fact, weather conditions were such that even this brood was small, and did less damage than usual, while very few of the larvæ that changed to pupæ ever changed to beetles; much the greatest number of pupæ were killed by cold, wet weather. The indication seemed to be that there will be a small number in New Brunswick next year. Concerning the fish oil soaps had much the same experience as that recorded by Mr. Marlatt, and one of the most discouraging features of the fight against the San José scale was the fact that the soaps used did not seem to be effective even when thoroughly applied. The reason for that was that most of the fish oil soap was very inferior and much of it probably did not contain fish oil at all. For that reason he has rather urged the farmers to make their own soaps, and has given a formula that has proved successful in actual practice. He had also used the Leggett soap in experimenting and had found it entirely reliable and satisfactory. In one case where some young trees were treated with it for the San José scale, he had received word from the owner of the orchard within a few days that no trace of the scale was to be found upon the trees this season.

Referring to some suggestions that had been made as to the dislike of insects to feed upon poisoned foliage he had found this to be true of the Elm Leaf Beetle, and the slow action of some of the poisons may be explained by the fact that the insects do not eat until they are forced to. Mr. Kirkland said that he had not noticed that the larvæ of the Gypsy moth hesitated about eating poisoned foliage. No choice seemed to be exercised. In some experiments the poisoned foliage was eaten in preference to that which was not poisoned, while in other experiments the reverse was the case. Where alternate leaves were poisoned it was usual to have them all eaten equally; so where parts of the leaf only were poisoned all parts of the leaf would be equally eaten. Mr. Johnson had observed of some insects that they refused to feed for some time upon poisoned foliage. Mr. Webster had found that the Bordeaux mixture was useful in keeping off the blister beetles, species of *Epicauta*, and, referring to what had been said of injuries caused by insecticides, he stated that this was a matter that would have to be rather closely studied in every locality. One farmer in Ohio had twice applied pure kerosene to his trees to kill the San José scale. The treatment was entirely effective, and the trees during the present Summer are in fine condition. The application on the trees was made in December or January, and again in March. He had expected that the trees would be killed and had warned the fruit-grower of his belief, but so far as he is able to see now there has not been the slightest trace of injury from the application. He thinks much of the difficulties with insectices are due to the farmer rather than to the poison used. We always know what we recommend, but we never know what the farmer actually does. The result is that reports are conflicting, and we are sometimes at a loss to explain results.

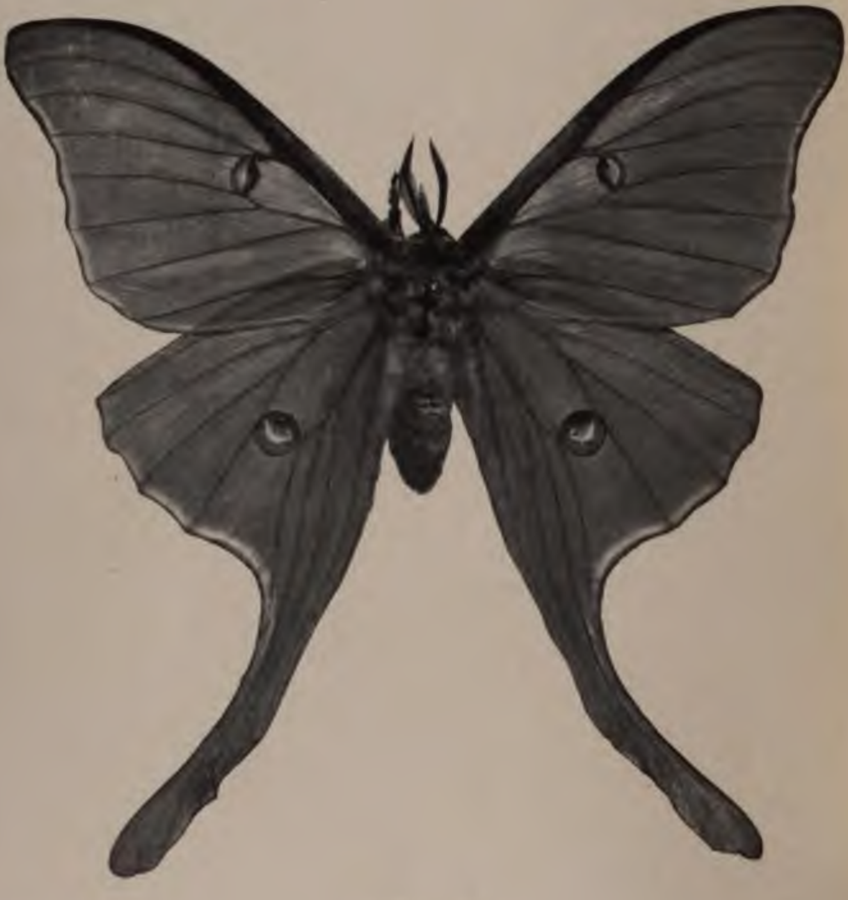
Mr. Fletcher spoke of the importance of a knowledge of the action of the insecticides on all the insects and suggested that it was not always safe to recommend applications for one insect simply because they had proved successful on another. He was much surprised to hear from Mr. Kirkland that lime did not have the effect of reducing injury from the arsenites, and thinks that is a point that should be carefully examined. He had been recommending lime equal in weight to the poison used.

By an arrangement with the Society for the Promotion of Agricultural Science, a joint meeting was held at 4 o'clock for the reading of papers interesting to both sections. Before this meeting Mr. A. D. Hopkins read a paper on "Pollen Distributing Insects Observed on Flowers of Timothy and Red Clover." Mr. Hopkins described the structure of the clover flower and the location of the pollen, and from his observations it appears that many more insects than have usually been credited, are able to fertilize the clover flower. He believes that not only the bumble-bees, but even short-tongued bees are useful, and he described the mechanism for the release and discharge of the pollen. Mr. Smith suggested that the case was not proved by the observations made, unless it was assumed that the flower of the clover is self-fertile. If it is, then Mr. Hopkins' observations indicate that any insect that is capable of producing the release of the pollen is able to pollenize the clover flower. If it requires the pollen from another head, the proof is not so good.

It may be interjected that this question was somewhat discussed by the members, informally, particularly with reference to the origin of the belief that bumble-bees were the chief agents, or perhaps the sole agents in fertilizing the flowers of red clover. Also some question was made as to the truth of the commonly related story of the clover and bumble-bees in Australia. There seems to be no doubt that the story of the importation of bumble-bees in Australia is true, but no one was able to refer to any scientific account of the introduction, or to any record of accurate observations made in the matter. It seemed also that the set of clover seed depended upon many circumstances, and that sometimes where the clover was apparently poor, the heaviest set of seed was found. It was suggested that in such cases the florets of the clover head were less developed and much shorter than they would be normally, and that this brought them within range of the shorter tongued bees and other insects.

Mr. Howard read, before the joint session, a biographical sketch of Dr. C. V. Riley, which it is impossible to abstract.

(To be continued.)



ACTIAS LUNA.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

"Flee!" cried she. "You mean fly, don't you?" "Never mind what insect I mean; just git. Pa's coming."

Prof. JOHN B. SMITH's fine work on Economic Entomology is completed and now on sale; it is a work that every entomologist should have, especially beginners. See Entomological Literature, No. 41, this issue.

Dr. GARRY DEN. HOUGH, of New Bedford, Mass., is studying the very difficult Dipterous family Muscidæ and would be pleased to receive material for study. He also desires other Diptera by purchase or exchange.

ASYMMETRY IN BUTTERFLIES.—Turning over some old letters yesterday I came across one by Mr. Sydney Webb, of Dover, England, containing some interesting statistics regarding asymmetry in European Lycænidæ. The letter is dated Jan. 14, 1885, and gives an enumeration of the specimens of five species in the cabinet of the writer, showing the proportion symmetrical and asymmetrical on the underside, thus:

	Symmetrical	Assymmetrical	Totals
Chrysophanus phlœas	2	4	6
Lycæna corydon	20	40	60
" *adonis*	2	18	20
" *ægon*	15	14	29
" *alsus*	6	10	16
	45	86	131

Mr. Webb adds: "These undersides are chiefly asymmetrical through spots being wanting or causing streaks. The specimens with additional ocelli are much more rare." This subject appears by no means to have received the attention it merits, and I will venture to suggest that those who have large series of Lycænidæ, Satyridæ, Nymphalidæ, etc., might favor us with some further statistics. Particularly, it should be ascertained which species are not frequently asymmetrical, whether these are equally so in all localities, and whether the development of the markings is in any species less on the average one side than on the other.—T. D. A. COCKERELL.

THE IMITATIVE FACULTY OF CATOCALA CONCUMBENS.—A few years ago, while collecting butterflies on a road near Manchester, N. H., I noticed a fine specimen of *Catocala concumbens* resting on a telegraph-pole. On inspecting the pole more closely I found four more specimens of the same species. I examined the tree-trunks and fence-rails in the neighborhood, but failed to find others, but on almost every telegraph-pole for a quarter of a mile I found from one to ten of these common moths. Every year since that time I have taken this species on these same poles, but none could be found on the neighboring tree-trunks. This year a lot of new telephone-posts were put up beside the old poles, but never have I found an insect on the new posts. May it not be that this moth, accustomed by natural selection to find its mate of this peculiar gray color, chooses a post of a similar color on which to alight? This would be a possible explanation of the selection of these particular poles for a resting place.—EDWARD WINSLOW CROSS.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be **limited to twenty-five** for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. **Please put date of capture and exact locality on each specimen.** Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the anatomy of insects, however, whether relating to American or exotic species will be recorded.

(The Associate Editor, in re-assuming charge of the preparation of these monthly summaries of Entomological Literature, desires to express not only his own thanks, but also, he believes, those of the readers of the NEWS, to Mr. William J. Fox, who has so acceptably performed this task for the journal from June, 1895, until Oct., 1896.—P. P. C.).

1 ZOOLOGISCHER ANZEIGER, No. 511.—On the morphology of the segmental appendages in insects and myriapods, C. Verhoeff.——Sept. 14, 1896.—On the morphology of the segmental appendages of insects and myriapods (concl.), C. Verhoeff. The termination of the vessels and

the corpuscles of Kowalevsky in the Scolopendridæ, O. Dusboscq.——Sept. 28, 1896.—Contribution to the knowledge of water-mites, A. Protz, figs.

2. THE CANADIAN ENTOMOLOGIST. London, Ont., September, 1896.—A house-infesting spring-tail (*Lepidocyrtus americanus* n. sp.), C. L. Marlatt. Still another *Aphilanthops*, T. D. A. Cockerell. New Coccidæ from Massachusetts and New Mexico, ibid. A summary of the members of the genus *Chilosia* Meig., in North America, with descriptions of new species, W. D. Hunter. A new *Pulex* from Queen Charlotte Islands, C. F. Baker. Notes on saw-fly larvæ, H. G. Dyar. *Agronoma* again, J. B. Smith. Additions and corrections to my 1894 list of Winnipeg butterflies, with notes for the season of 1895, A. W. Hanham.——October, 1896.—Some notes on insect enemies of trees, A. D. Hopkins. Some new Nematids, C. L. Marlatt. Association of Economic Entomologists: Eighth annual meeting, Buffalo, N. Y., Aug. 21-22, 1896. Notes on Coleoptera—No. xii, J. Hamilton. Miscellaneous notes: *Stagomantis carolina*, *Gonatista grisea*, *Acanthosoma cruciata*, *Trichopepla semivittata*, *Libythea bachmani*, *Papilio philenor*, W. S. Blatchley.

3. THE ENTOMOLOGIST. London, September, 1896.—Silk-producing Lepidoptera (cont.), A. Wailly. Notes on the synonymy of Noctuid moths (cont.), A. G. Butler.——October, 1896.—Should the formation and arrangement of a collection of insects be made subservient to the elucidation of scientific problems?, W. H. Bath. Uniformity in pinning and setting Lepidoptera, W. Tunstall. The androconia of *Callidryas florella*, J. C. Rickard. New bees of the genus *Melissodes*, T. D. A. Cockerell. Fungi or androconia, J. B. Smith.

4. BULLETIN OF THE ILLINOIS STATE LABORATORY OF NATURAL HISTORY, vol. iv, article 11.—A check-list of the Coccidæ, T. D. A. Cockerell.

5. ENTOMOLOGISCHE NACHRICHTEN, xxii, 17, 18. Berlin, September, 1896.—The Ethiopian Limacodidæ of the Berlin Museum, F. Karsch.

6. PROCEEDINGS AND TRANSACTIONS OF THE ROYAL SOCIETY OF CANADA (2), i, section iv. Ottawa, 1895. Received Sept. 22, 1896.—Presidential Address: Practical Entomology, J. Fletcher.

7. MATHEMATISCHE UND NATURWISSENSCHAFTLICHE BERICHTE AUS UNGARN, xii Berlin and Budapest, 1895. Received Sept. 22, 1896.—Theridioidæ of the spider fauna of Hungary, Ladislaus Kulczynski.

8. HISTOIRE PHYSIQUE, NATURELLE ET POLITIQUE DE MADAGASCAR publiée par Alfred Grandidier, xxiii.—Histoire naturelle des Orthopteres, 1re partie Blattides et Mantides par H. de Saussure et Zehnter, 39^{e} Fascicule. Paris, MDCCCXCV, pp. xvi, 233, iv, 10 pls.

9. REVUE GENERALE DES SCIENCES. Paris, Aug. 30, 1896.—Notice of S. Scudder's "Revision of the American fossil cockroaches, with descriptions of new forms," F. Meunier.

[illegible] Lepidoptera Indica. By F. Moore. Part xxv. London, L. Reeve & Co., 1896. September [illegible]—Subfamily Nymphalinæ. [illegible]

Notes from the Leyden Museum, vol. [illegible] Leyden, June 1896. [illegible] C. Ritsema Cz. On the genus [illegible] and description of some new species. Dr. A. Senna.

The Annals and Magazine of Natural History. London, [illegible] 1896.—Nectar-drinking Diptera attracted by the odor of flowers. [illegible] Description of a new species of Satyrid butterfly from [illegible] Smith [illegible]—October, 1896.—[illegible] of a Termite [illegible] H. McE. Knower [illegible] Johns Hopkins Univ. Circ., June 1896). Contributions from the New Mexico Biological Station—[illegible] Descriptions of new Bees collected [illegible] Townsend in the State of Vera Cruz. T. D. A. Cockerell. [illegible] Observations on spermatogenesis in spiders. J. Wagner (from Zool. [illegible] 1896).

Biologia Centrali-Americana. Part cxxx. London, June, 1896. Arachnida-Araneidea, pp. [illegible] F. P. Cambridge. Coleoptera, [illegible] pp. [illegible] pl. xxiii. G. C. Champion. Id., vol. ii, pt. 6, [illegible] H. Standford. Hymenoptera, vol. i, pp. 385–392. P. Cameron. Rhynchota Homoptera, vol. ii, pp. [illegible] pl. x. W. W. Fowler. Diptera, vol. ii, pp. [illegible] F. M. van der Wulp.

Bulletin 44, West Virginia Agricultural Experiment Station, Morgantown, W. Va., April, 1896.—Insects injurious to farm and garden crops. The character of the injury. The insect causing it. The remedy briefly and plainly stated. A. D. Hopkins and W. E. Rumsey.

Societas Entomologica, Zurich-Hottingen, Sept. 15, 1896.—A [illegible] in the snow. B. Slevogt.—October 1. A cheap oven for preserving caterpillars. Dr. L. Heissler (figs.).

Transactions and Annual Report, Manchester Microscopical Society, 1895.—Some insect pests. A. T. Gillanders. The organs [illegible] reproduction in the Insecta. F. Paulden.

Proceedings of the Natural Science Association of Staten Island (New Brighton), Sept. 12, 1896.—Notes on Staten Island butterflies. [illegible]

Proceedings and Transactions of the Croydon Microscopical and Natural History Club, Feb. 19, 1895, to Jan. 21, 1896.—The [illegible] of certain larvæ. E. Lovett. Notes on the house-[illegible] C. H. Goodman.

Il Naturalista Siciliano, Palermo, Sept. 1, 1896.—Studies on [illegible] *[illegible]* and *Amaurorrhinus*. J. Croissandeau. [illegible]

20. NATURE. London, Sept. 17, 1896.—Specific characters among the Mutillidæ, T. D. A. Cockerell.

21. THE ENTOMOLOGIST'S RECORD. London, Sept. 15, 1896.--Neuration in the Lepidoptera: the study of the wings, neuration, shapes, etc., A. Quail, 1 pl. (cont.). Mimicry—v. The origin of leaf markings as a mimetic pattern, J. W. Tutt.——October, 1896.—Mimicry v (cont. from September number). Notes on *Apions* and their larvæ, C. Morley.

22. REPORT OF THE SIXTH MEETING OF THE AUSTRALASIAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, held at Brisbane, Queensland, January, 1895.—An undescribed species of *Charon*, with notes on the metamorphosis of the first pair of ambulatory legs into a physiological pair of feelers, Dr. J. Lauterer, 1 pl.

23. NATURWISSENSCHAFTLICHE RUNDSCHAU. Braunschweig, Sept. 26, 1896.—[Summary of] R Heymons: On the reproduction and develment of *Ephemera vulgata* L., K. On P. Marchal's propagation and development of social wasps, R. v. Hanstein.

24. BIOLOGISCHES CENTRALBLATT. Leipsic, Sept. 15, 1896.—On the presence of "Schuppen-balgen" in Lepidoptera, Dr. A. Spuler, figs.

25. SITZUNGSBERICHTE DER PHYSIKALICH-MEDICINISCHEN SOCIETAT IN ERLANGEN, 26 Heft, 1894–1895.—On the scales of Lepidoptera, A. Spuler.

26. TRANSACTIONS AND PROCEEDINGS OF THE NEW ZEALAND INSTITUTE, 1895, vol. xxviii. Wellington. Issued June, 1896.—New Zealand Diptera, P. Marshall, three papers, 10 pls. Further Coccid notes: with descriptions of new species and discussions of questions of interest, W. M. Maskell, 8 pls. Contributions towards a monograph of the Aleurodidæ, a family of Hemiptera-Homoptera, id., 12 pls. On New Zealand Cicadidæ, W. F. Kirby. On the habits of New Zealand ants, W. W. Smith. On the construction of the comb of the hive bee, C. Phillips.

27. PSYCHE. Cambridge, October, 1896.—The species of *Nemobius* found in North America, S. H. Scudder. Notes on the Winter insect fauna of Vigo County, Indiana—viii, W. S. Blatchley. Some additional species of *Prosapis*, T. D. A. Cockerell.

28. BERICHTE DES NATURWISSENSCHAFTLICHEN VEREINS ZU REGENSBURG, v, 1896.—The German Pterophorina, systematically and biologically treated, Dr. O. Hofmann, 3 pls.

29. TIJDSCHRIFT VOOR ENTOMOLOGIE, xxxviii, 2-4. The Hague, December, 1895, March, 1896.—A noteworthy Javan Tachinid, F. M. van der Wulp, 1 pl. On compound stigmata in Dipterous larvæ, with a contribution on the metamorphosis of *Hydromyza livens*, Dr. J. C. H. de Meijere, figs. Systematic description of the Thysanura found in Holland, Dr. J. T. Oudemans, figs. Attempt at an analytical table for the genus *Cryptocephalus*, A. F. A. Leesberg.

30. JAHRESHEFTE DES VEREINS FUR VATERLANDISCHE NATURKUNDE IN WURTTEMBERG, lii. Stuttgart, 1896.—Synopsis of the German Hemiptera Heteroptera, family Capsidæ, Dr. T. Hüeber.

31. VERHANDELINGEN DER KONINKLIJKE AKADEMIE VAN WETENSCHAPPENITE AMSTERDAM (2), v, 2, 1896.—On gall-formation and alternation of generations in *Cynips calicis* and on the *circulans* galls, M. W. Beijerinck, 3 pls.

32. ANNUAIRE DU MUSEE ZOOLOGIQUE DE L'ACADEMIE IMPERIALE DES SCIENCES DE ST. PETERSBOURG, 1896, No. 3.—Revision of the Eurasiatic species of the genus *Abia* Leach, A Semenow. Miscellanea scorpiologica, A. Birula. Catalogue of the species of the subfamily Celyphidæ, G. Jacobson.

33. THE AMERICAN NATURALIST. Philadelphia, October, 1896.—A new character in the Colobognatha, with drawings of *Siphonotus*, O. F. Cook, 1 pl.

34. PROCEEDINGS OF THE ENTOMOLOGICAL SOCIETY OF WASHINGTON, iii, 5, Oct. 6, 1896.—C. V. Riley, with portrait. Additional notes on the insect guests of the Florida land tortoise, H. G. Hubbard. Rhopalosomidæ, a new family of fossorial wasps, W. H. Ashmead. A coleopterous enemy of *Corydalis cornuta*, L. O. Howard. Some insects which brave the dangers of the pitcher-plant, H. G. Hubbard. On the distribution of certain species of *Mytilaspis*, id. A new dipterous genus related to *Gnoriste*, D. W. Coquillett, fig. Annual address of the President—The phylogeny of the Hymenoptera, W. H. Ashmead.

35. PHYSIKALISCHE ABHANDLUNGEN DER KONIGLICHEN AKADEMIE DER WISSENSCHAFTEN ZU BERLIN AUS DEM JAHRE, 1895. Received Oct. 13, 1896.—The segmentation of the insectan body, Dr. R. Heymons, 1 pl.

36. PROCEEDINGS OF THE U. S. NATIONAL MUSEUM, No. 1096. Washington, 1896.—New species of North American Coleoptera of the family Scarabæidæ, M. L. Linell.——No. 1098.—1896. List of the Lepidoptera collected in East Africa, 1894, by Mr. William Astor Chanler and Lieut. Ludwig von Höhnel, W. J. Holland.

37. FOURTH ANNUAL REPORT OF THE OHIO STATE ACADEMY OF SCIENCE (place of publication and date not given).—Third report on the Odonata of Ohio, D. S. Kellicott.

38. THE TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON, 1896, pt. iii, Sept. 30, 1896.—On the Diptera of St. Vincent, West Indies, Prof. S. W. Williston (Dolichopodidæ and Phoridæ by Prof. J. M. Aldrich), 7 pls.

39. JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY, September, 1896.—The North American species of *Nemobius*, S. H. Scudder. Impressions received from a study of our North American Rhopalocera.

H. Skinner, M.D. Description of the larvæ of some Heteromerous and Rhynchophorous beetles, H. F. Wickham, 1 pl. The life-history of the Florida form of *Euclea delphinii*, H. G. Dyar, 1 pl. New species of American Heterocera, W. Schaus. Descriptions of two Noctuid larvæ, H. G. Dyar. Description of a new moth, W. Beutenmüller, fig.

40. THE ENTOMOLOGIST'S MONTHLY MAGAZINE. London, October, 1896.—Suggestions respecting the use of albo-carbon (impure naphthaline), H. G. Knaggs, fig. New North American bees, T. D. A. Cockerell. Gum arabic versus tragacanth for carding insects, G. C. Champion. Notes on Coccidæ, W. M. Maskell. On *Plagithmysus*: a Hawaiian genus of Longicorn Coleoptera, D. Sharp.

41. ECONOMIC ENTOMOLOGY FOR THE FRUIT-GROWER, AND FOR USE AS A TEXT-BOOK IN AGRICULTURAL SCHOOLS AND COLLEGES. By J. B. Smith, Sc.D. (Philadelphia, J. B Lippincott Co.).—This is a work of four hundred and sixty-six pages, and has four hundred and eighty-three illustrations. The book needs to be seen to be appreciated, and we may best convey an idea of it by giving the table of contents. Part first treats of the structure and classification. The anatomy of the various parts of the body are described, as well as an account of the digestion, circulation, respiration, nervous and reproductive systems. Growth and metamorphosis are also treated in this chapter. Part two comprises the general classification and the various orders are exhaustively treated considering the ground to be covered. Part three treats of insecticides, preventives and machinery. The practical importance of the subject is everywhere kept in view, and the appropriate remedial measures are given after the different species are described, and their life-history given. The concluding chapters treat of predaceous insects, parasites, fungous diseases, farm practice to prevent insect attack, preventives, insecticides and machinery for spraying and other uses. Prof. Smith is a practical entomologist of unusual ability, and has produced a most valuable work, and is to be congratulated on the result of his labor. The many illustrations are an interesting feature and will be most useful. The book well covers the field of which it treats, and we can heartily commend it to all entomologists.—H. S.

INDEX TO THE PRECEDING LITERATURE.

The number after each author's name in this index refers to the journal, as numbered in the preceding literature, in which that author's paper is published; * denotes that the paper in question contains descriptions of new North American forms.

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ECONOMIC ENTOMOLOGY.

Fletcher 6, Hopkins and Rumsey 14, Gillanders 16, Hopkins 2.

Doings of Societies.

PHILADELPHIA, October 13, 1896.

A stated meeting of the Feldman Collecting Social was held at the residence of Mr. H. W. Wenzel, 1509 S. 13th Street. Members present: Messrs. Bland, H. W. Wenzel, Castle, Fox, Boerner, Johnson, Schmitz, A. Hoyer and E. Wenzel. Visitor: Mr. Edward A Klages, of Crafton, Pa. Meeting called to order at 8.55 P.M., Mr. Bland presiding.

Mr. Wenzel spoke of an old and rare tree at Germantown which is shortly to give way to the woodman's axe. The tree is a species of the pecan-nut, and owes its origin to a seed brought to Germantown nearly a century ago by the well-known botanist, Nuttall. A fund was subscribed to by lovers of botany in Philadelphia, especially those residing in the district of Germantown, and Nuttall was sent to what was then Arkansas Territory with instructions to collect specimens of plants, seeds and flowers that grew in that section. Mr. Wenzel thought that this must have been the trip on which Nuttall collected the type specimen of *Lamprohiza reticulata* which Say described in 1828. LeConte's paper says: "Described from a unique specimen collected by Mr. Nuttall in Arkansaw." Continuing, Mr. Wenzel mentioned that on September 20th, while in company with Albert and Frank Hoyer at Palmyra, N. J., he had examined a field of asparagus, looking for *Crioceris 12-punctatus*, but not a specimen could be found. After entering a small wood, however, along one side of the asparagus field on a small growth of huckleberry the *Crioceris* was found in great numbers, the query was made by Mr. Johnson whether it was probable that the specimens were going to hibernate in this place. Mr. Hoyer promised to further investigate in order to ascertain if such was the case. On the same date *Cercopeus chrysorhœus* was taken under split chestnut wood laid out to dry.

Mr. Wenzel also mentioned the capture of *Pyractomena ecostata* and *Photuris frontalis* at Anglesea, N. J., on July 11th.

Mr. Johnson exhibited a number of Diptera which had been given him by Prof. Smith to be determined for one of his students who had captured them at Lakewood, N. J. He called attention to the following species: *Tabanus fulvulus*, *T. sagax*, *T. melanocerus*, *Therioplestes cinctus* and *Exoprosopa emarginata*.

Mr. Klages favored the members with an interesting account of some experiences in breeding Coleoptera, showing that considerable work of interest can be accomplished in this manner. On one of his trips he noticed a tree under which a party of campers had built a fire, the charred condition of which caused him to pass it by as an unlikely abode of insects. Somewhat over a year later, however, in passing the same tree he noticed a number of newly-made holes from which a species of *Scolytus* had evidently emerged; he then concluded to take some of the wood home for breeding purposes; the reward was a number of *Scolytus muticus*. Last April his brother and himself cut down the entire tree and removed it to his breeding room, shortly thereafter these beetles came out in swarms, as many as 2500 coming out in a day, when about 1000 more came out he concluded he had enough for all practical purposes, so proceeded to destroy the rest, as they showed a disposition to get out in the open air and finding no other way would even attempt to bore through the window sashes. From this same wood he also bred the following: *Læmophlœus*, several species, *Rhizophagus minutus;* Monotomidæ, several species; *Agrilus*, two species; *Elasmocerus terminatus*, *Cymatodera undulata*, *Phyllobænus dislocatus*, *Cymatodera undulata*, *Phyllobænus dislocatus*, *Chariessa pilosa*, *C. pilosa* var. *onusta*, *Orthopleura damicornis*, *Xylotrechus colonus*, *Neoclytus erythrocephalus*, *Euderces picipes*, *Liopus alpha*. The speaker stated that the species of this tree was unknown to him, but there was another of the same kind in the vicinity, from which he intends to have it determined. Continuing, Mr. Klages reported the finding of several specimens of *Obrium rubidum* on the locust tree; this tree was also cut down to find if the insect fed upon the same and he expected good results from this experiment also but was disappointed, as he succeeded in breeding but one specimen; this, however, proved to his satisfaction that the insect fed upon this tree.

In connection with Mr. Klages remarks on *O. rubidum* Mr. Wenzel said that he knew of only a single specimen collected in this neighborhood and that collected by himself on oak, the specimen now being in Dr. Horn's collection.

No further business being presented the meeting adjourned to the annex at 10.10 P.M.

THEO. H. SCHMITZ, *Secretary*.

NEWARK ENTOMOLOGICAL SOCIETY.—A special meeting was held at the residence of Mr. A. J. Weidt, September 27th, six members and several visitors present. A series of special meetings at the houses of members in addition to the regular meetings of the Society was decided upon.

Mr. Seib exhibited a specimen of *Limenitis arthemis*, taken in Jersey City. Mr. Weidt showed a specimen of *Utethesia bella*, the upper wings white instead of yellow. A paper by Mr.

Brehme was read, containing a report of collections made in different States. In the discussion the members reported the season in New Jersey as good for Lepidoptera excepting *Catocala*, the species of which were very rare.

An annex after the meeting was devoted to music and refreshments.

The Entomological Section

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF MEETINGS.

SEPTEMBER 24, 1896.

A regular stated meeting of the Entomological Section of the Academy of Natural Sciences was held in the Hall, S. W. cor. Nineteenth and Race Streets, this evening, Mr. E. T. Cresson in the chair. Members present: Fox, Calvert, Johnson, Skinner, Ridings, G. B. Cresson, Wenzel, Liebeck, Dr. Griffith. Associates: Reinick, Castle, Boerner, Kemp, Westcott. Visitors: H. Hornig and T. H. Schmitz. A fine case showing the life-history of the Tussock moth, *Orgyia leucostigma*, was presented to the cabinet by Mr. Hornig.

Dr. Calvert gave a brief account of the entomological results of his visit to Europe during the past fourteen months, stating that the chief object of his journey had been to spend a year in study at German universities and incidentally to see as much of Europe as time would allow, including, of course, the entomological collections. The speaker had consequently spent the Winter semester 1895–96 at Berlin, and the Summer semester 1896 at Jena. Previous to reaching Berlin he had visited the British Museum, Oxford, Cambridge, the private collections of Mr. McLachlan in London, Baron de Selys-Longchamps at Liege, Belgium, and M. René Martin at Le Blanc, France, the Musées Zoologiques at Brussels and at Paris. In the holidays between the two semesters he had visited the Museums at Prague, Vienna, Trieste, Bologna, Florence (together with the rooms of the Italian Entomological Society), Naples, Genoa, Turin, Milan, Munich and Halle. After leaving Jena, on his return to America, in addition to revisiting some of the above-mentioned, he had also seen the entomological collection at Leyden. The speaker referred to the uniform courtesies which he had received, and made especial mention of the freedom accorded to him at the Royal Museum in Berlin during a residence of five months in that city. There also he had attended meetings of the Deutsche and Berliner Entomological Societies. The speaker purposely refrained from repeating details, regarding the museums visited, which have already appeared, or will hereafter appear, in the present volume of ENTOMOLOGICAL NEWS.

Mr. Johnson gave an interesting account of his trip abroad during the Summer, especially in relation to the museum collections of insects. Mr. Reinick exhibited specimens of *Xenorhiphis brendeli* taken on a window at the Wagner Institute, Philadelphia, only five specimens being thus far known. Also *Ischalia costata*, which is very rare and not before taken east of Westmoreland County, Pa. The specimen exhibited was taken in Fairmount Park. *Pleurophorus cæsus* was caught in the lower part of Philadelphia for the first time. The speaker also mentioned a trip to the Orange Mountains of New Jersey, and the locality was praised as a good one. A large collection of material taken at the electric lights at Woodbury, N. J., was shown. Many rare species were found among the common mass of material. *Cicindela lepida* was reported by the same gentleman from Clementon, N. J. Mr. Liebeck said it had also been taken at Jamesburg, N. J., and in parts of the West. Mr. Wenzel made the statement that when the species was found away from the sea-shore that such localities were sandy and that the sea had once covered over such places. Mr. Laurent exhibited a fine collection of Coleoptera made during three weeks in April in Georgia and Florida. Dr. Griffith spoke of collection made by himself and Mr. Johnson in the Potomac River valley. The locality was said to be a fine one and was described in detail. The collections made will be exhibited later.

Dr. HENRY SKINNER, *Recorder*.

The following papers were read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS :

A NEW SPECIES OF RHODODIPSA.

By JOHN B. SMITH, Sc.D.

Rhododipsa masoni n. sp.—Ground color varying from deep wine-red or crimson, to almost blackish, the latter tinge being added by an overlaying of black scales. The head and thorax are yellow, with a rather dull orange tint, and the abdomen is blackish, except at the tip, where it is tufted with the same yellow hair that is found on the thorax. The primaries have the median lines fairly well defined by white or yellowish scales, differing much, however, in distinctness. In all cases they are more or less crenulated, but sometimes the lines are quite broad and distinct, while at other times little, except a series of venular dots can be observed. The basal line is wanting, or indicated only by a pale dot on the costa. The t. a. line is quite distant from base, as a whole with a rather even outcurve; the prominent teeth of the line being directed inwardly. The t. p. line is usually close to the t. a. line, narrowing the median space, and in its general course it is slightly and rather evenly bisinuate. In this case the teeth of the line are directed outwardly. There is an indefinite, pale s. t. shade, carrying a reddish s. t. line, and at the base of the fringes is a blackish shading, sometimes broken up into spots. The ordinary spots are very vaguely indicated. The orbicular is generally of quite good size and yellowish in color, but without defining lines. The reniform may be entirely absent, or may be indicated by paler scales. The secondaries are black, the fringes yellowish or red tinged. On the underside the disc of both wings is black, and towards the margin they all become tinged with bright red; most distinctly so toward the apex. The armature of the anterior tibia consists of a series of three outer and one long inner claw, the tibia itself being distinctly abbreviated. Expands 1 inch ; 25 mm.

Hab.—Utah, California and Colorado.

The insect resembles the Texan *volupia*, differing from it most prominently by the black hind wings and by the tendency to very much darker fore wings. I have no definite locality for the Utah specimens. The California specimens were, I believe, taken in the Yellowstone. One of the Colorado specimens I have had in my collection for several years, perhaps one of the specimens taken by Mr. Bruce in 1888. Mr. Bruce sent me additional specimens a short time ago, with the information that it was collected in some numbers, by Mr. T. J. Mason, on the flowers of *Rudbeckia.*

It is at Mr. Bruce's request that I name the species after Mr. Mason. It is rather curious that within the last year two red species with black underwings should have been discovered, the one resembling the Eastern *Alaria florida* and the other resembling *volupia.*

A SWARM OF BUTTERFLIES.—Ocean City, Md., Sept. 13.—About three o'clock to-day, during a northeasterly wind, the heavens became almost black with swarms of huge red-winged butterflies. They moved in a southerly direction. It was fully an hour before the last ones passed over.

Physocnemum violaceipenne n. s., **Copris gopheri, Spalacopsis filum** and **Ancylocera brevicornis.**

By JOHN HAMILTON, M.D.

Physocnemum violaceipenne.—Black, thorax bituberculate, elytra violaceous, without ivory lines. Head short, very finely scabro-punctate, a broad transverse frontal impression in front of the eyes, which are rounded and moderately coarsely granulated, a fine median line; antennæ about the length of the body, ciliate beneath, scape short, conical; thorax about as long as the width of the base or apex, sides of thorax strongly arcuate, much widest at middle, from which they are rounded to base and apex, a strongly elevated median line from near apex to base, a large obtuse tubercle on each side on the disc just behind the middle, very finely scabro-punctate and with dense minute hairs; elytra violaceous, surface rather even, densely finely scabro-punctate, a little more coarsely toward base, parallel, slightly compressed at the sides at middle, apex margined, roundly truncate, with the angles obtuse, sides vertical till one-fourth before apex and separated from the disc by a humeral carina, disc with two slightly elevated lines, parallel to each other and to the humeral carina extending from base to three-fourths to apex; underside rather sparsely punctate and pubescent. Length .45 inch.

Described from two examples without apparent sexual difference. Taken at Jeannette, Westmoreland County, Pennsylvania, by Mr. H. Klages.

Differs from *brevilineum* by the complete absence of ivory lines and the much finer, denser, scabro-punctuation of the elytra, also the thicker and more serrate joints of the antennæ. The color is closely like that seen on fracturing a piece of Prussian blue.

Copris gopheri Schwarz.

This is one of the several beetles taken in Florida in the underground habitation of the digging tortoise, *Polyphemus gopheri*; it may, however, be a question whether it is entirely subterranean in its breeding habits. I have recently examined three female examples sent to Rev. Jerome Schmitt among other things, from Sanfield, Fla. These flew into the house at night to the lights; they differed in no respect from such as were obtained by digging, except in being more highly polished and intensely black. Whether these had been bred with the tortoise and came forth in quest of another habitation of the same kind, or may have been bred elsewhere, is open to investigation.

Spalacopsis filum Duval.

By some inadvertence this name was converted into *linum* in the synopsis of the Lamiinæ (Tr. Am. Ent. Soc. xxiii, 145), and the error was not observed till after publication. In the same paper, on page 169, a similar error occurs, where *Ancylocera brevicornis* Casey is said to be the female of *Elytroleptus divisus;* it should have been the female of *Ancylocera bicolor* Oliv.

——o——

A NEW SPECIES OF PHILANTHUS FROM NEW MEXICO.

By S. N. Dunning, Hartford, Conn.

Philanthus psyche n. sp. ♀.—Length: body 9 mm.; of anterior wings 5 mm. Black, with white markings, inclined to yellowish on legs. Head subquadrate, slightly broader than high, densely and firmly punctate and covered with a short, sparse pubescence; clypeus, face and extension to emargination of eyes and small spot back of eyes white, except extension of color between the antennæ is inclined to lemon-yellow, clypeus rounded, and with four distinct teeth, the central incision longer and less distinct than others; ocelli in a triangle, first as large as last two combined; eyes emarginate, elongate oval, dark green; mandibles: first two-thirds white, last third black; scape: antennæ white at tip and below, above black, but white predominating; first joint of flagellum black, second black above and reddish brown below, larger at tip, remainder reddish brown, lighter below. Thorax black, with collar; four elongated spots on mesothorax near collar, tegulæ, tubercles, slightly curved mark back of same, scutellum, postscutellum, and two short lines on metathorax white, covered with short, sparse, whitish hair, closely and finely punctate; a slight cavity between markings on metathorax, also a larger cavity on posterior angle. Abdomen above more coarsely punctate than thorax, faint indications of pubescence, black with a large whitish band on segments 1-5, growing smaller towards tip, band on first segment consists of two semi-circles, curving towards tip and joined by a straight line on posterior side; band on second segment curved much as in first, but white is extended, so that instead of being in semi-circles there are two black spots in midst of white, but near posterior margin of the segment; third band consists of two rounded spots joined by a straight line; fourth and fifth similar, but fainter; last segment bronzed, edged with rufous, more coarsely and sparsely punctate, slightly emarginate; ventrals sparsely and about as coarsely punctate as last segment above, a faint tinge of rufous on posterior edge second segment; anterior coxæ black, trochanters white tipped inside, rest black, first half of femora black, rest whitish; tibia yellow, with elongated black spot inside; tarsi yellowish, inclined to rufous and armed with a series of long spines, longest in the middle; first joint long as second and third combined; middle coxæ white tipped outside; trochanters white tipped inside; femora: first half black, rest whitish, slightly spined and with black spot inside; tarsi inclined to rufous and much less strongly spined than in first pair; posterior coxæ white tipped outside; trochanters white tipped inside, femora almost all black; tibiæ light yellow rufous, more strongly spined than middle pair, black spot inside; spines on tarsi almost disappearing. Wings hyaline, with no tinge of dusk; marginal cell almost as long as first and second submarginal and not appendiculate; stigma not interrupted by transparent spot; second submarginal receiving recurrent nervure at its center, third receiving recurrent at its base; submedian cell posterior wings just perceptibly longer than median on externo-medial nervure.

One specimen, Las Cruces, New Mex. (Ckll. 4893).

Allied to *P. politus* Say, but differs in face much narrower, smaller and more slender build, coloring much more extended and prominent, sculpture metathorax, wings being transparent, and in submedian cell of posterior wings being less than one-half as much longer than median on extreme medial cell.

I am indebted to Mr. Theo. D. A. Cockerell for this species.

OBITUARY.

W. TIEF, Dipterist, Professor in Villsch, Carinthia.

F. A. A. SKUSE, entomologist at the Australian Museum.

ERRATA.

Insert the following on page 8, vol. vii, in article by Mr. W. Schaus:

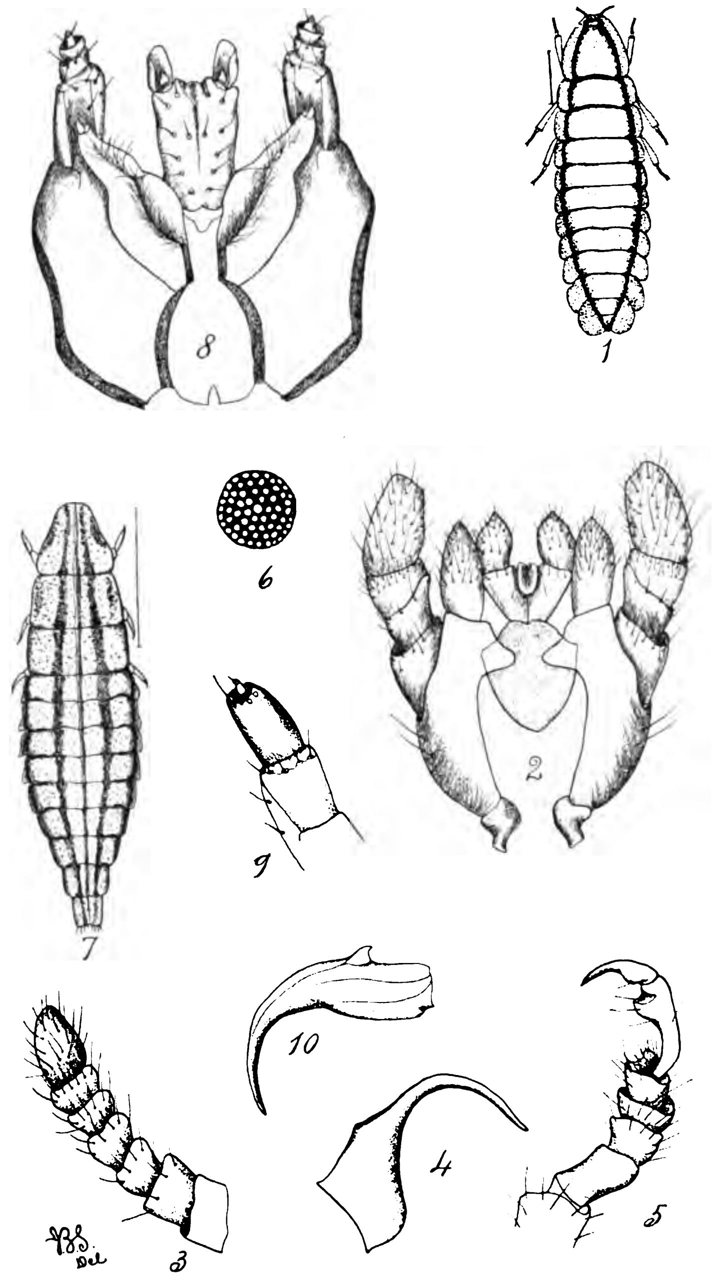
Bolina heliothoides Gn., spec. gen., Noct. iii, 68.

The ♀ of *Melipotis ochrodes* Gn.

Hypocala filicornis Gn., spec. gen., Noct. iii, 76.

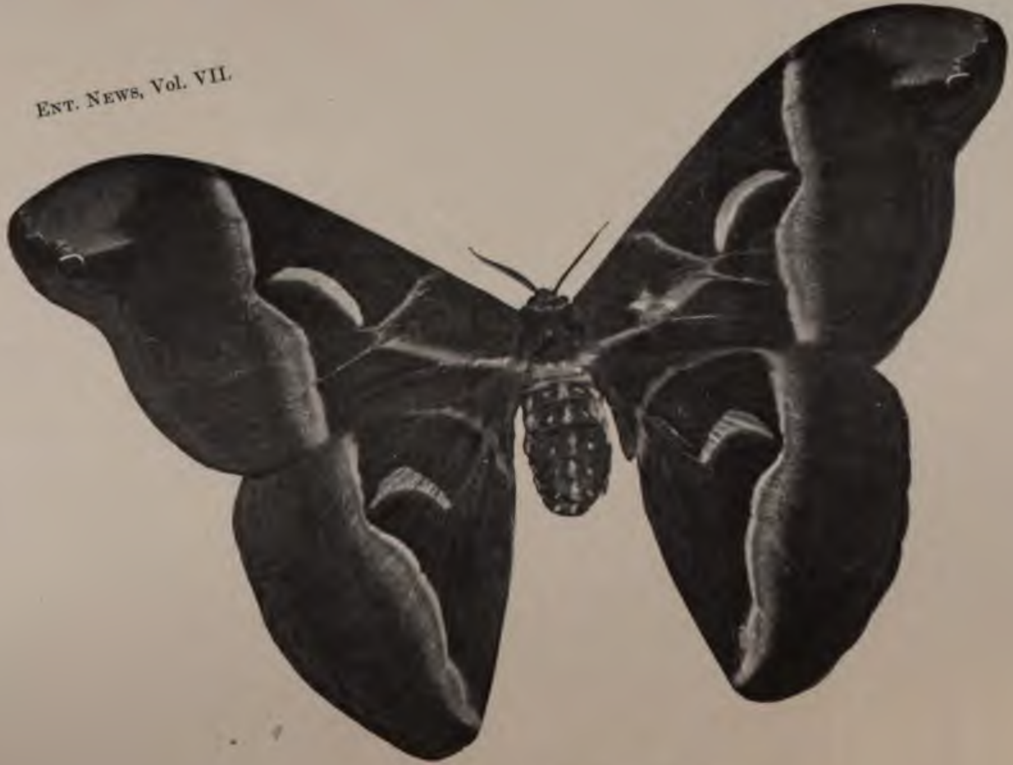
A synonym of *H. andremona* Cr.

ENTOMOLOGICAL NEWS for October was mailed October 1, 1896.



LAMPYRIDÆ (Wenzel).

See page 29



SAMIA CYNTHIA.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. VII. DECEMBER, 1896. No. 10.

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NOTES ON EUROPEAN ENTOMOLOGICAL COLLECTIONS.

By PHILIP P. CALVERT.

VIII.—TURIN.

The Museums of Zoology and Comparative Anatomy of the Reale Universita di Torino are housed in the Palazzo Carignano. Prof. Lorenzo Camerano is Director of both, with Dr. Achille Griffini as entomological Assistant in the former, and Dr. Ermanno Giglio-Tos in the latter. To Prof. Camerano the writer is indebted for a most enjoyable visit to the collections, and to Dr. Griffini for the following notes on their chief entomological contents.

The entomological collections comprise more than 250,000 specimens.

COLEOPTERA.

Among the Coleoptera are particularly to be mentioned the Heteromera and a part of the Chrysomelidæ, formerly belonging to the collection of Dejean.

The general collection of the Marchese di Breme, rich in many type specimens.

The collections from South America and from Syria made by Truqui.

The collections made by Ghiliani in Spain, Sicily and at Para, those made by Gené in Sardinia, and the entire collection of European Coleoptera of Eugenio Sella, the discoverer and describer of *Carabus olympiæ* and of other interesting species of the European fauna.

The recent collections made by Dr. A. Borelli in the Argentine Republic and in Paraguay, and those of Dr. E. Festa in Syria and in Darien.

HYMENOPTERA.

Noteworthy are the entire collection of the Marchese Spinola and those brought by the above-mentioned travelers.

DIPTERA.

The entire collection of Prof. L. Bellardi, particularly important for the series of Mexican Diptera.*

Among the other orders are numerous series from the collectors referred to above or obtained by exchange or purchase. [The Odonata are being studied and arranged by M. René Martin of Le Blanc, Indre, France.]

The study collections are in closed horizontal boxes. A large series representing the principal forms is on public view.

IX. NAPLES.

The Zoological Museum of the Reale Universita di Napoli, in the Palazzo della Universita, has its Director the veteran zoologist, Prof. Achille Costa, and Dr. Giuseppe Palma is assistant in Entomology. Prof. Costa has very kindly written some notice of the entomological collections, which we freely translate.

In the Museum, at 1860, at which time the Italian government confided to Prof. Costa its direction (together with the Chair of Zoology) there were no insects. Now there are the following collections:

1. The extra European collection. The order of the Hemiptera is especially interesting, for here is the entire collection of Guerin-Meneville, and, in consequence, the types of Guerin himself and many of Signoret's. Here also, in the different orders,

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* Many of these have been described by Dr. Giglio-Tos in various numbers of the "Bolletino dei Musei di Zoologia ed d'Anatomia Comparata della R. Univ. di Torino."

are the types of species described by Prof. Costa, either in the Annuario del Museo Zoologico, or in the Report on his voyage to Egypt.

2. The European entomological collection.

3. The complete entomological collection of the old Neapolitan provinces. This is wholely the fruits of the researches of Prof. Costa for more than fifty years, and contains all the types of genera and species described in the "Fauna del Regno di Napoli" and other works.

4. A special collection of Sardinian insects, comprising all the species mentioned or described in Prof. Costa's six memoirs on the "Geo-fauna Sarda."

X. FLORENCE.

At the Museo di Storia Naturale di Firenze (Via Romana 19), where also are the rooms of the Societa Entomologica Italiana, and of Prof. Targioni Tozzetti, the well-known economic entomologist, the writer was informed by Dr. Angelo Senna, assistant in Entomology, that the only important collections of insects here are Rondani's collection of Italian Diptera, including his types, and Fuchs' collection of European Coleoptera. These are the property of the Museum, the Italian Entomological Society possessing no collections.

RANDOM NOTES ON COLEOPTERA.

By JOHN HAMILTON, M.D.

Tachycellus (*Acupalpus*) nitidus *Dej.*, *Acupalpus obsoletus* Say, *Bradycellus nitidus* Mann , LeConte, *Glycerius nitidus* Casey. Scarcely a species in the whole range of Coleoptera exhibits greater diversity among the individuals in size and color, varying from .14 to .28 inch. in length, and from bronzed black to testaceous. According to Dr. Horn the small form, which is the black one, is usually the male, while the large testaceous individuals are mostly females,—a statement I have never met with in print. I did not recognize the bronze form, lately come to hand, as belonging to that species till so assured. Whatever its size and color, it may be readily known by the obliteration of all the elytral striæ except the sutural, which is equally deep from base to apex.

Habitat.—British Columbia, Oregon, California, Mexico (*Say*), from Orizaba southward (*Horn*) ; Lower California.

Agrilus macer Lec., represented as occurring here in western Pennsylvania (Can. Entom. xxviii, 263) is not, according to Dr. Horn, that species to which, however, it is closely related. The broad band of white pubescence on the side margins of the thorax in conjunction with the emarginate projecting carina of the pygidium and other features mentioned (*l. c.*) will readily distinguish it when found.

Pleurophorus ventralis Horn has been recently described (Tr. Am. Ent. Soc. xiv, 92) from two examples, one from Ontario, Canada, the other from Washington, D. C. I have lately seen another from Westmoreland County, Pa., taken near St. Vincent by Rev. P. Jerome Schmitt. Were its habits known it might not prove so rare. The peculiarities of this species are that the first three ventral segments are acutely carinate along the middle and the fourth and fifth widely, deeply, circularly emarginate at base, the emargination being occupied by membrane. The inner five striæ of the elytra are deeply impressed to the apical margin, whereas in all the other species of the Aphodiidæ, according to Dr. Horn, so far as now known the fourth and fifth striæ do not attain the apex, being incarcerated by the conjunction of the fourth and sixth intervals.

Phytodecta scutellaris || *Sahb.* Coleop. Vega Exp. p. 55 (*separat*). This species, by some oversight, was placed under *Phyllodecta* in the Catalogue of the Coleoptera of Alaska (Tr. Am. Ent. Soc. xxi, 32). Phytodecta *Kirby* is older than *Gonioctena* Redt., and should be used for the latter name, as is done in the latest European catalogue. *P. scutellaris* || occurred on the shore of Behring Strait.

Microscapha arctica Horn was described (Tr. Am. Ent. Soc. xx, 144) from two examples taken at Fort Wrangel, Alaska. Three examples from Graham, one of the Queen Charlotte Islands, and one from British Columbia have lately come to hand more fully representing the species. The types were .09 inch. in length and "ferruginous brown;" the present are respectively .08, .09, .10 and .11 inch. long; the two smaller (one from B. C.)

are perhaps paler than the types, the third about the color, while the fourth is piceous black throughout, except the antennæ, mouth parts and legs pale.

This species, by description, seems to bear quite a superficial resemblance to *Euscaphurus saltator* Casey of the Dascyllidæ, under which name my examples from both localities came; however the larger size, the truncate maxillary palpi, the four-jointed hind tarsi, the long, beautifully pectinate spurs of the hind tibiæ and the absence of a visible scutellum and sutural striæ readily distinguish it.

The occurrence of species with the mature individuals varying from pale to piceous or black is common on the Pacific islands and coast. There are before me now *Anisotoma humeralis*, *Agathidium rotundulum*, *Liparocephalus brevipennis*. *Cercyon analis*, *Atomaria kamtschatika* and *Opsimus quadrilineatus* so colored, besides many others might be mentioned.

Hymenorus (*Mycetophila*) rufipes *Lec.* The species was briefly described and figured by Major LeConte (Ann. Lyc. Nat. Hist. N. Y. i, 170) and redescribed by Dr. LeConte (S. M. C. 167, p. 136) as a *Hymenorus*. Capt. Casey has removed it to *Mycetochara* = *Mycetochares*, probably on the supposition that the penultimate tarsal joints are not lobed and where it seems much out of place. The only example known to Mr. Casey was the unique in the LeConte cabinet, which Dr. LeConte considered a *Hymenorus*. My example, taken here in western Pennsylvania, shows this joint to be emarginate at least, the fineness of tarsi making it difficult to discern the lobe. As it otherwise has the facies of the species of *Hymenorus* with which Dr. LeConte associated it, it seems more prudent to permit it to remain there, though differing from them in some respects, as in the shortness and slenderness of the tarsi and the smallness and greatly wider separation of the eyes. In size my example is .18 inch. long; the antennæ, mouth parts and underside, except the prothorax, rufous ; the thorax is quadrate, the sides being rounded slightly from one-third to apex; the base is squarely truncate without the usual sinuations; the surface granulate in appearance from the deep, dense, close punctuation; the elytra with striæ of fine punctures and punctulate intervals, and with long pubescence.

The type was from New York; also recorded from Michigan.

NOTES ON LAMPYRIDÆ, WITH THE DESCRIPTION OF A FEMALE AND LARVA.

By H. W. WENZEL.

Last Winter in working on the family Lampyridæ I became much interested and fully made up my mind to give these interesting insects a little more attention. The results during the Summer season were satisfactory to some extent, the capture of several species before unknown to me at Anglesea, N. J., being of interest. Experience during the Summer has shown that Lampyridæ must be collected at night, and that each species has its own peculiar light and flight. While a number of species may be found in great numbers at night, it is utterly impossible to find a specimen during the day. To quote Dr. J. B. Smith, it only goes to show how little we know.

The female of *Lamprohiza reticulata* Say is undetermined and unknown in our literature, as is also the larva of *Pyractomena ecostata.* I am indebted to Dr. J. B. Smith for the drawings herewith given.

Lamprohiza reticulata Say.—This interesting little Lampyrid was described by Say under the name of *Lampyris reticulata* in the journal of the Academy of Natural Sciences, in 1825, from a single specimen brought from Arkansas by Mr. Thomas Nuttall. As little or nothing is known of this insect it will probably be of interest to record the following notes made at Cranberry, Mitchell County, N. C., altitude about 3250 feet. The first specimens were observed flying on the evening of June 11; the night being cool and damp, and after somewhat of a chase several specimens were captured by my friend, Mr. Lancaster Thomas and myself. As I could not recognize the species at once the desire came to learn more of its habits. The flight is never more than three or four feet above the ground and always in a straight line. The phosphorescent light which they produce in their flight is a continuous glow of a distinct greenish color much larger and brighter than the other species of Lampyrids that were captured.

It was not long before the object of their low flight was discovered as specimens would frequently drop to the ground. There, to our delight, adhering to the roots of grass and other vegetation we found the wingless female showing the same bright green light as the male, but extremely difficult to capture and handle, and almost invariably the specimens were somewhat crushed in capturing. A number of specimens of this species were collected at night, but not one specimen could be found during the day.

The following are some of the characters of the female: Length .28 inch. 7 mm., fusiform, flattened above. The alcoholic specimens are of a uniform pale straw-yellow, when alive almost transparent, without markings. The dorsal surface is extended beyond the side lines of the body in thin transparent lobes, as shown in the figure. The surface rather coarsely, irregularly and densely punctured, giving it a reticulated appearance. Legs nearly equal in length, feebly developed, tarsal claws simple and comparatively large. Head small, completely withdrawn beneath the anterior extension. Eyes small, black, ocelli separated and rounded, set into a dark frame work; antennæ short, stout, extending but little beyond the head, six-jointed, with long sparse hair; mandibles large, slender and pointed; the mouth parts are fairly distinct; the maxillæ have but one lobe; palpi four-jointed, counting the basal segment; labrum simple, consisting of a divided, palpiform structure set upon a shield-like mentum.

Pyractomena ecostata Lec.—This is one of our largest species of Lampyrid, and was found by me for the first time at Anglesea, Cape May County, N. J., July 11.

On the night of the above date a general raid was made on Lampyrids by Prof. Smith, of New Brunswick, and Messrs. Beyer, of New York; Bischoff, of Newark; Laurent and myself of Philadelphia.

In chasing after the first specimen through the salt grass we discovered that the large *Pyractomena* was adhering to the low grass, and in disturbing this the specimens would drop to the ground and show light. A sweep-net was brought into use next, but few were caught in this way, as they would invariably drop before we got near them, but would always turn on the light when disturbed. In this way a number of specimens were captured. It seems strange that this insect lives where the ground is covered with a small species of land crab, one of the *Gelasimus*, that lives, it seems, on everything that it can get its one large aw on. But this is where *Pyractomena* lives, without doubt.

Males, females and larva were found, the latter also showing light.

During the early flight in the evening *Photuris frontalis* was taken, but not on the low salt grass. On one of my previous trips to this island *Photinus consanguineus*, *P. ardens* and two forms of *Photuris frontalis* were taken. *Pyractomena* was carefully sought for during the day, but not a specimen was taken.

The following are some of the larval characteristics: Length .75 inch.; 19 mm.; fusiform, greatest width .20 inch.; 5 mm.; depressed and flattened above. Color deep sulphur-yellow, with a slight rosy tint on the thoracic segments, as in the imago; upper surface with a smoky-brown stripe on each side of the middle, broadest centrally and attenuating at each end. Body beneath with similar stripes on the thoracic and extreme sides of the abdominal segments. The surface above is well marked with large shallow punctures. On the first to the fifth abdominal segments are lateral lobe-like projections from the side. Legs short, quite stout, with a single tarsal claw. Head, at first sight, seems entirely wanting, soft in texture, except for the mouth parts, enveloped in a membranous tube, which, when the head is extended, forms a long flexible neck.

The insect is able to withdraw its head from sight as completely as any snail or turtle; mandibles yellow, fairly well chitinized, pointed, with short divergent hair near the base; antennæ short, two-jointed, with a button-like tubercle, which may represent a third joint. The basal segment is not defined and partly enveloped in membrane. A single ocellus on each side of the head behind the antennæ is not easily seen; the other mouth parts are proportionately small, and best described by the figure.

EXPLANATION OF PLATE XI.

Fig. 1. *Lamprohiza reticulata* Say, female.
" 2. Maxillæ and labium of same.
" 3. Antenna of same.
" 4. Mandible of same.
" 5. Tarsus of same.
" 6. Eye composed of a group of distinct simple ocelli.
" 7. Larva of *Pyractomena ecostata*.
" 8. Maxillæ and labium of same.
" 9. Antenna of same.
" 10. Mandible of same.

A List of the Sphingidæ of Southern New Hampshire.

By EDWARD WINSLOW CROSS.

The species given below were taken by me at Manchester, N. H., in one season's collecting. The list embraces, I think, nearly all the species that occur in this locality. Almost all were taken at light or on flowers at dusk, with the exception of those in the genera *Hemaris* and *Amphion*.

Instead of arranging them in the order of their genera I have chosen rather to give them in the order of their abundance.

In looking at the list we find that *Protoparce celeus* and *Thyreus abbotii*, which are very common in most parts of New England, are rare insects. The only specimen of this latter species that I have seen in the locality was taken by a friend on a window-screen of my house. I took three specimens of *Smerinthus cerisyi* one evening at light. Would that I might have another such evening.

COMMON SPECIES.

Ceratomia amyntor
Smerinthus geminatus
Ampelophaga myron
“ chœrilus
Paonias myops
Sphinx gordius
Amphion nessus
Deilephila chamænerii
Hemaris diffinis
Paonias excacatus
Ceratomia undulosa
Sphinx chersis
“ drupiferarum
“ kalmiæ
Triptogon modesta ♂.

RARE SPECIES.

Protoparce celeus
Hemaris thysbe
Deilephila lineata
Ellema harrisii
Triptogon modesta ♀
Sphinx lucitiosa
Thyreus abbotii
Paonias astylus
Protoparce carolina
Philampelus pandorus
“ achemon
Smerinthus cerisyi
Dolba hyleus

NEMOBIUS NEOMEXICANUS Scudder (Jour. N. Y. Ent. Soc. 1896, p. 104).—I have found this species rather commonly at Las Cruces and Mesilla, New Mex., where it comes to lights in the evening. It was also taken, together with the type specimen of *N. pictus*, at the village of Colorado (pronounced Colorā-o), New Mex., where they were attracted by light on July 10. I write this note to supplement the information given by Mr. Scudder, and assist future searches for these small Orthoptera.—T. D. A. COCKERELL.

LEPIDOPTERA IN SOUTH DAKOTA.

By P. C. Truman, Volga, S. Dak.

Volga is located in the midst of a vast prairie stretching many miles in every direction. About two miles distant runs the Little Sioux River having a light fringe of timber and brushwood on its banks. Some ten miles away are several small lakes and between small bodies of timber, perhaps 200 acres in all. Aside from that the only trees are a few planted by the farmers and villagers. In this section I have collected Lepidoptera for some six years. But my collecting has been sadly interfered with by professional and other duties. Next to the small boy dried apples have been my greatest aid in capturing the festive "bug." The following is a list of the species I have found here—divided into three classes—common, rare and very rare.

COMMON.

Danais archippus
Euptoieta claudia
Argynnis idalia
" cybele
" myrina
Phyciodes nycteis
" carlota
" tharos
Grapta interrogationis
" comma
Vanessa antiopa
Pyrameis atalanta
" cardui
Limenitis disippus
Apatura celtis
Neonympha canthus
Cœnonympha ochracea
Satyrus olympia
Thecla acadica
Chrysophanus thœ
" helloides
Lycæna melissa
" comyntas
Pieris protodice
" rapæ
Colias eurytheme
Papilio asterias
Thymelicus poweshiek

Pamphila pawnee
" peckius
" mystic
" metacomet
Pyrgus tessellata
Pholisora catullus
Eudamus tityrus
Hemaris diffinis
Deilephila lineata
Sphinx chersis
Ceratomia undulosa
Paonias excæcatus
Alypia octomaculata
Scepsis fulvicollis
Euphanessa mendica
Crocota ferruginosa
Callimorpha lecontei
" vestalis
Pyrrharctia isabella
Leucarctia acrea
Spilosoma virginica
Euchætes collaris
Halisidota tessellata
" caryæ
Datana ministra
Attacus cecropia
Hemileuca nevadensis
Clisiocampa americana

Acronycta grisea
" populi
" americana
Rhynchagrotis placida
" alternata
Agrotis ypsilon
Peridroma saucia
Noctua baja
" normaniana
" clandestina
Feltia subgothica
" herilis
" venerabilis
" volubilis
Carneades quadridentata
" messoria
" insignata
Mamestra meditata
" trifolii
" rosea
" picta
" olivacea
" lorea
Hadena devastatrix
" lignicolor
" modica
Perigea luxa
Dipterygia scabriuscula
Helotropha reniformis
Hydrœcia nictitans
" nitela
Leucania unipuncta
Caradrina civica
Pyrophila pyramidoides
Pyrrhia umbra
Orthosia lutosa
Cirrœdia pamprina
Scoliopteryx libatrix
Cucullia asteroides
Aletia argillacea
Plusia precationis
" brassicæ
" simplex
Heliothis armiger
Schinia jaguarina
Schinia lupatus
Dasyspoudaea lucens
Acantia erastroides
" candefaçta
Erastria carneola
Drasteria erechtea
" erichto
Catocala whitneyi
" ultronia
" celia
" uxor
" parta
" luciana
" concumbens
" amatrix
Pheocyma lunifera
Homoptera edusa
" lunata
Homopyralis tactus
Pseudaglossa lubricalis
Bomolocha bijugalis
Hypena humuli
" scabra
Prochærodes transversata
Azelina hubnerata
Endropia bilinearia
" pectinaria
" hypochraria
Therina fervidaria
Angerona crocataria
Microgonia limbaria
Acidalia nivasata
" inductata
" enucleata
Corycia vestaliata
Semiothisa denticulata
Thamnonoma sulphuraria
Eufitchia ribearia
Haematopis grataria
Heterophleps harveiata
Nomophila noctuella
Loxostege chortalis
" cereralis
Hydrocampa albalis
Pyralis farinalis
Crambus hastiferellus
" topiarius
Thaumatopsis pexellus

(To be continued.)

APRIL COLLECTING IN GEORGIA AND FLORIDA.

By Dr. D. M. Castle and Philip Laurent.

We left Philadelphia on the 10th of April, taking the 12.09 P.M. train over the Atlantic Coast Line, arriving at Savannah, Ga., about noon the next day. After a hasty lunch we were off to Bonaventure, which is a suburb of Savannah, where we collected until approaching darkness warned us that it was time to retrace our steps. The 12th we visited Tybee Island, where we collected all day. The island is about an hour's ride from Savannah, and much resembles some of the beaches on the New Jersey coast. having a flat sandy beach, back of which are numerous sand dunes, back of which again we find a dense growth of trees and underbrush. The 13th another suburb of Savannah, known as the "Isle of Hope," received our attention. The party who gave the place its name was living here, and was no doubt living in hope of some day having sufficient means to enable them to get away from the desolate spot. As a collecting ground we were well satisfied with the place, as it was here that we captured a number of rare Georgia insects. During our stay at Savannah the following captures were made:

ARACHNIDA.

Lycosa punctulata *Htz.*
Dendryphantes retarius *Htz.*
Pardosa milvena *Htz.*

ODONATA.

Nehalennia posita *Hag.*
Anomalagrion hastatum *Say.*

HOMOPTERA.

Homalodisca triquetra

LEPIDOPTERA.

Phyciodes phaon *Edw.*
" tharos *var.* marcia *Edw.*
Neonympha eurytris *Fab.*
" sosybius *Fab.*
Calephelis cænius *Linn.*
Thecla melinus *Hbn.*
Lycæna comyntas *Gdt.*
" isophthalma *H.-S.*
Anthocharis genutia *Fab.*
Papilio asterias *Fab.*
" palamedes *Dru.*
Pamphila panoquin *Scud.*
Mamestra laudabilis *Gn.*
Melipotis jucunda *Hbn.*
Crambus minimellus *Rob.*

COLEOPTERA.

Cicindela hirticollis *Say.*
Morio monilicornis *Lat.*
Pterostichus lucublandis *Say.*
Platynus crenulatus
" rubripes *Zimm.*
" punctiformis *Say.*
Lebia viridipennis *Dej.*
Chlænius laticollis *Say.*
" nemoralis *Say.*
Agonoderus infuscatus *Dej.*
Stenolophus ochropezus *Say.*
Anisodactylus agilis *Dej.*
Atheta sp.
Colydiidæ nov. gen. n. sp.
Epierus regularis *Beauv.*
Tenebrioides muritanica *Linn.*
Cardiophorus cardisce *Say.*

Melanotus fissilis *Say*.
Limonius basillaris *Say*.
Corymbites trivittatus *Lec*.
Chalcophora virginiensis *Dru*.
Taphrocerus
Telephorus lineola *Fab*.
" bilineatus *Say*.
Polemius limbatus *Lec*.
Pseudebæus apicalis *Say*.
Melyris basalis *Lec*.
Clerus ichneumoneus *Fab*.
Passalus cornutus *Fab*.
Onthophagus hecate *Panz*.
" tuberculifrons *Har'd*
Psammodius bidens *Horn*.
Atænius abditus *Hald*.
Aphodius fimetarius *Linn*.
Trox suberosus *Fab*.
Diplotaxis subcostata *Blanch*.
Ligyrus rugiceps *Lec*.
Phileurus valgus *Fab*.
Euphoria inda *Linn*.
" sepulchralis *Fab*.
Elaphidion villosum *Fab*.
Atimia dorsalis *Lec*.
Typocerus zebratus *Fab*.
Goes debilis *Lec*.
Chlamys plicata *var*. assimilis *Kl*.
Pachybrachys carbonarius *Hald*.
Diachus auratus *Fab*.
Diabrotica 12-punctata *Oliv*.
Galerucella notulata *Fab*.
Oedionychis quercata *Fab*.
" *var*. suturalis *Fab*.
Haltica ignita *Ill*.
Chætocnema confinis *Cr*.
Odontota bicolor *Oliv*.
Porphyraspis cyanea *Say*.
Caryoborus arthriticus *Fab*.
Bruchus musculus *Say*.
Alphitobius piceus *Oliv*.
Tharsus seditiosus *Lec*.
Phaleria picipes *Say*.
Cteniopus murrayi *Lec*.
Mordellistena pustulata *Melsh*.
Eudiagogus pulcher *Fab*.
Anthonomus sexguttatus *Dietz*.
Sphenophorus cariosu *Oliv*.
Phœnicobius chamæropis *Lec*.
Acylomus ergoti *Casey*.

Leaving Savannah by the midnight train on the 13th, we reached Enterprise, Fla., about two o'clock the following afternoon. The only hotel that the place can boast of was closed for the season, but a Mrs. Yandell came to our rescue and accommodated us with neat, clean rooms and beds The table was supplied with good, wholesome food, and was all that could be expected when we take into consideration the fact that she only charged us the modest sum of one dollar a day. Live-oak and scrub-oak grow abundantly around Enterprise, and from these we obtained many rare and interesting specimens. The gopher tortoise (*Gopherus polyphemus*) is quite common some two miles from Enterprise, so on the 18th we excavated one of the gopher's burrows, and were fortunate enough to obtain specimens of many of the interesting insects known to inhabit the gopher's retreat. During the six days spent at Enterprise we collected the following insects:

ARACHNIDA.

Dendryphantes retarius *Htz.*
Hamatalina grisea *Keys.*
Icius palmarum *Htz.*
Philodromus ornatus *Bks.*
Misumena rosea *Keys.*
Tetragnatha laboriosa *Htz.*
Tmarsus floridensis *Keys.*
Zygoballus lettini *Pck.*
Tibellus duttoni *Htz.*
Astia vittata *Htz.*
Cheracanthium inclusa *Htz.*
Lycosa riparia *Htz.*
" erràtica *Htz.*
Sergiolus cyaniventris *Sim.*
Anypæna velox *Beck.*

ODONATA.

Calopteryx maculata *Beauv.*
Nehalennia irene *Hag.*
Enallagma durum *Hag.*
" pollutum *Hag.*
" signatum *Hag.*
Ischnura ramburii *Selys.*
var. credula *Hag.*
Gomphus minutus *Selys.*
Tramea carolina *Linn.*
Libellula axillena *Westw.*
" auripennis *Burm.*
Trithemis? minuscula *Ramb.*
Celithemis eponina *Drury.*
Perithemis domitia *Drury.*
Mesothemis simplicollis *Say.*
Pachydiplax longipennis *Burm.*

ORTHOPTERA.

Romalea microptera
Ceuthophilus latibula *Scud.*
Arnilia chlorizaus *Walk.*
Leptysima sp.
Chortophaga viridifasciata *DeG.*
Thyreonotus sp.
Platyzosteria ingens *Scud.*
" sabalianus *Scud.*
Ischnoptera sp.
Temnopteryx virginica *Burm.*
Anisomorpha buprestoides *Stoll.*
Labidura riparia *Pall.*

HEMIPTERA.

Emesa longipes *DeG.*
Leptocorisa tipuloides *DeG.*

HOMOPTERA.

Aulacizes irrorata *Fab.*
Oncometopia undata *Fab.*
Cyarda punctata *Walk.*

LEPIDOPTERA.

Agraulis vanillæ *Linn.*
Phyciodes phaon *Edw.*
Pyrameis atalanta *Linn.*
" huntera *Fab.*
Neonympha eurytris *Fab.*
" sosybius *Fab.*
Thecla favonius *S.* and *A.*
Pieris monuste *Linn.*
" protodice *Bd.-Lec.*
Catopsilia eubule *Linn.*
Terias lisa *Bd.-Lec.*
Papilio ajax *var.* telamonides *Feld.*
" thoas *Linn.*
" asterias *Fab.*
" palamedes *Dru.*
" philenor *Linn.*
Ancyloxypha numitor *Fab.*
Pamphila campestris *Bdv.*
" phylæus *Dru.*
" brettus *Bd.-Lec.*
" accius *S.* and *A.*
" vitellius *S.* and *A.*
Nisoniades nævius *Lint.*
Eudamus pylades *Scud.*
" proteus *Linn.*
Cosmosoma omphale *Hbn.*
Dahana atripennis *Grt.*
Harrisina americana *Harr.*
Crocota rubicundaria *Hbn.*
Utetheisa bella *Linn.*
Renia brevirostralis *Grt.*
Caberodes confusaria *Hbn.*
Eois minutularia *Hulst.*
Boarmia pampinaria? *Gn.*
Margaronia quadristigmalis *Gn.*
Hydrocampa stenialis *Gn.*
Phæcasiophora confixana *Walk.*

DIPTERA.

Psilocephala pictipenis
Psilopus ciliatus *Linn. ?*
Trichopoda formosa *Wied.*
" lanipes *Fab.*
Jurinia hystrix *Fab.*
Sarcophaga sp.
Gymnoprosopa polita *Town.*
Systœchus solitus *Walk.*

COLEOPTERA.

Scarites subterraneus *Fab.*
Dyschirius sellatus *Lec.*
Clivina americana *Dej.*
Ardistomis obliquata *Putz.*
Tachys nanus *Gyll.*
Platynus californicus *var.* floridanus [*Lec.*
Lebia pumila *Dej.*
" viridipennis *Dej.*
Callida viridipennis *Say.*
" decora *Fab.*
" fulgida *Dej.*
Brachynus cyanipennis *Say.*
" fumans *Fab.*
Chlænius prasinus *Dej.*
" nemoralis *Say.*
Oodes 14-striatus *Chd.*
Anisodactylus rusticus *Dej.*
Necrophorus carolinus *Linn.*
Ptomaphagus consobrinus *Lec.*
Creophilus villosus *Grav.*
Philonthus longicornis *Steph.*
Conosoma basale *Er.*
Bryoporus rufescens *Lec.*
Oxytelus insignitus *Grav.*
Hippodamia convergens *Guer.*
Coccinella sanguinea *Linn.*
Psyllobora nana *Muls.*
Chilocorus bivulnerus *Muls.*
Exochomus contristatus *Muls.*
Brachyacantha ursina *var.* basalis *Melsh. ?*
Hyperaspis bigeminata *Rand.*
Hyperaspidius militaris *Lec.*
Scymnus terminatus *Say.*
Dermestes vulpinus *Fab.*
Hololepta quadridentata *Fab.*
Hister abbreviatus *Fab.*
" americanus *Payk.*
Saprinus pennsylvanicus *Payk.*
" assimilis *Payk.*
Cardiophorus gagates *Er.*
Melanotus clandestinus *Er.*
Anthaxia quercata *Fab.*
Chrysobothris chrysœla *Ill.*
Agrilus ruficollis *Fab.*
Taphrocerus
Brachys ovata *Web.*
" fascifera *Sc.*
Pachyscelus cæruleus *Sc.*
Eros trilineatus *Melsh.*
Plateros canaliculatus *Say.*
Pyractomena ecostata *Lec.*
Photinus lineellus *Lec.*
" pyralis *Linn.*
Chauliognathus marginatus *Fab.*
Podabrus rugulosus *Lec.*
Telephorus costipennis *Lec.*
" rectus *Melsh.*
Temnopsopus impressus *Sz.*
Pseudebæus apicalis *Say.*
" oblitus *Lec.*
Attalus circumscriptus *Say.*
Clerus rosmarus *Say.*
" lunatus *Spin.*
Petalium bistriatum *Say.*
Hemiptychus castaneus *Hamilton.*
Canthon depressipennis *Lec.*
" lævis *Drury.*
Copris gopheri *Hubbard.*
Phænæus difformis *Lec.*
Onthophagus hecate *Panz.*
" polyphemi *Hubbard.*
" tuberculifrons *Har'd*
" pennsylvanicus *Ha'd*
Atænius imbricatus *Melsh.*
Aphodius stercorosus *Melsh.*
" troglodytes *Hubbard.*
Anomala undulata *Melsh.*
Cremastochilus harrisii *Kirby.*
Trichius affinis *Gory.*
Romaleum pumilum *Newm.*
Strangalia strigosa *Newm.*

Typocerus zebratus *Fab.*
Liopus punctatus *Lec.*
Methia pusilla *Newm.*
Lema cornuta *Fab.*
" collaris *Say.*
" solani *Fab.*
" confusa *Chev.*
" conjuncta *Lac.*
" trilineata *Oliv.*
" 6-punctata *var.* albini *Lac.*
Anomœa laticlavia *Forst.*
Chlamys plicata *Fab.*
" " *var.* assimilis *Kl.*
" " *var.* tuberculata *Kl*
Exema gibber *Oliv.*
" conspersa *var.* dispar *Lec.*
Bassareus croceipennis *Lec.*
" " *var.* vittatus *Suffr.*
Cryptocephalus bivius *Newm.*
" aulicus *Hald.*
" incertus *Oliv.*
Griburius larvatus *Newm.*
Pachybrachys litigiosus *Suffr.*
" limbatus *Newm.*
" trinotatus *Melsh.*
" atomarius *Melsh.* ?
Monachus ater *Hald.*
" saponatus *Fab.*
Triachus atomus *Suffr.*
Typophorus canellus *Fab.*
Metachroma pellucida *Cr.*
Graphops curtipennis *Melsh.*
Rhabdopterus picipes *Oliv.*
Chrysomela cephalanthi *Sz.*
" scalaris *Lec.*
Galerucella integra *Lec.*
Hypolampsis pilosa *Ill.* [*Fab.*
Oedionychis vians *var.* concinna
" 6-maculata *Ill.*
" quercata *Fab.* [*Fab.*
" " *var.* suturalis
Disonycha collaris *var.* collata *Fab.*
Haltica ignita *Ill.*
Diphaulaca bicolorata *Horn.*
Longitarsus testaceus *Lec.*
Phyllotreta vittata *Fab.*
Dibolia vincta
Psyllodes elegans *Horn.*
Microrhopala erebus *Newm.*
Odontota notata *Oliv.*
" nervosa *Panz.*
Charistena nigrita *Oliv.*
Porphyraspis cyanea *Say.*
Coptocycla aurifalcea *Fab.*
" arizonæ *Cr.*
" guttata *Oliv.*
" clavata *Fab.*
Bruchus alboscutellatus *Horn.*
Epitragus tomentosus *Lec.*
Polypleurus nitidus *Lec.*
Nyctobates pennsylvanicus *DeG*
Apatrinus aciculatus *Lec.*
Tharsus seditiosus *Lec.*
Paratenetus punctatus *Sol.*
Platydema flavipes *Fab.*
" ellipticum *Fab.*
Boletophagus bifurcus *Fab.*
Helops cisteloides *Germ.*
Hymenorus obscurus *Say.*
Cistela sericea *Say.*
Cteniopus murrayi *Lec.*
Statira croceicollis *Mkl.*
" basalis *Horn.*
Allopoda lutea *Hald.*
Oxacis granulata *Lec.*
Mordella scutellaris *Fab.*
Mordellistena aspersa *Melsh.* ?
" pustulata *Melsh.*
" ambusta *Lec.*
Xylophilus n. sp.
Tomoderus interruptus *Laf.*
Anthicus vicinis *Laf.*
Epicauta strigosa *Gyll.*
Eugnamptus striatus *Lec.*
Rhynachites hirtus *Fab.*
Pterocolus ovatus *Fab.*
Attelabus nigripes *Lec.*
Neoptochus adspersus *Boh.*
Eudiagogus pulcher *Fab.*
Brachybamus electus *Germ.*
Onychylis nigrirostris *Boh.* ?
Otidocephalus myrmex *Hbst.*
Magdalis perforata *Horn.*

Notolomus basalis *Lec.*
Læmosaccus plagiatus *Fab.*
Chalcodermus æneus *Boh.*
Cryptorhynchus bisignatus *Say.*
Ceutorhynchus n. sp.
Baris umblicata *Lec.*
Centrinus picumnus *Hbst.*
" rectirostris *Lec.*
" concinnus *Lec.*
" confusus *Boh.*
Rhynchophorus cruentatus *Fab.*
Phœnicobius chamæropus *Lec.*
Cratoparis lunatus *Fab.*

HYMENOPTERA.

Hylotoma rubiginosa *Beau.*
Sphex bifoveolatus *Tasch.*
Polistes instabilis *Sauss.*
" bellicosus
" canadensis
" rubiginosus *St. Farg.*
Monobia quadridens *Linn.*
Vespa carolina *Dru.*
Osmia faceta *Cress.*
Xylocopa virginica *Dru.*
Bombus americanorum *Fab.*
Sceliphron cementarius
" cæruleum

(To be continued.)

NEWSPAPER ENTOMOLOGY in relation to the Department of Agriculture.—As he stepped out of the door of the Agriculture Building, Secretary Morton pointed to a small brick structure to the east. "That's where we keep our insects," he said, "and no one need laugh at the collection. I regard it as fine an array of bugs as any on earth. Yes sir," (remarked the Secretary, while his eye twinkled, for, be it known, the Secretary doesn't think much of bug investigations) "I've got a bug in there that cost the government $20,000; he doesn't look it, but he did. It's a fact. One day an outfit of scientists started in pursuit of this bug. They ranged all over the hemisphere and stuck to his trail like bloodhounds. They ransacked North America all the way from the Isthmus to Alaska. After most remarkable adventures by flood and field, they treed the bug and took him prisoner. He was then brought captive to Washington, and he's right there now in that brick house, the highest-priced bug on earth. A round-up of the total expense of that one bug hunt came to over $20,000, but we got the bug. There's nothing like science," remarked the Secretary. —*Washington Post.*

AN ANT FIFTEEN YEARS OLD.—Sir John Lubbock, the naturalist, has been experimenting to find out how long the common ant would live if kept out of harm's way. On Aug. 8, 1888, an ant which had been thus kept and tenderly cared for died at the age of fifteen years, which is the greatest age any species of insect has yet been known to attain. Another individual of the same species of ant (*Formica fusca*) lived to the advanced age of thirteen years, and the queen of another kind (*Lasius niger*) laid fertile eggs after she had passed the age of nine years.—*Scientific American.*

I WOULD like to change the name of the species described by me in ENT. NEWS, 1896, p. 215, as *Tropidia nigricornis* to *Tropidia montana.* I find that the name *nigricornis* has been used by Philippi for a Chilian *Tropidia.*—W. H. HUNTER, Lincoln, Neb.

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., DECEMBER, 1896.

WITH this volume of the NEWS Mr. E. T. Cresson's connection with the journal as treasurer will cease. For seven years Mr. Cresson has acted in this capacity, and our subscribers know how well this has been done. The entire work of getting out the journal has been his, or, in other words, the large amount of necessary labor, except that of editing, has been done by our worthy treasurer. Editing the "Transactions" of the American Entomological Society, and acting as treasurer of the Society, as well as of the Entomological Section of the Academy of Natural Sciences. is work enough for any man who is also actively engaged in other pursuits. Mr. Cresson will, however, continue as an honored member of the Advisory Committee of the NEWS, and his valuable aid and advice will be accorded journal as in the past.

ACCORDING to a Paris journal a French scientist is trying to compel bees to make medicated honey for the cure of various diseases. He keeps the bees under glass and furnishes only such flowers as possess the desired properties. By the different kinds of honey thus produced influenza, coughs and colds, indigestion, asthma and many other ills are said to be readily if indirectly reached. These medicines ought to be decidedly palatable.

☞ NOTICE.—Those who wish to continue their subscriptions to **ENTOMOLOGICAL NEWS** for **1897**, will please indicate their desire **before** January 1st next. Subscription blank enclosed in this number.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

(Continued from page 272.)

Proceedings of the Association of Economic Entomologists.—Saturday, August 22, morning session.—Mr. Smith spoke of the results of his trip to California to investigate the insect enemies of the San José scale with the view of introducing them into New Jersey. Mr. Smith finds that the work of predaceous insects has been very much over-estimated in California, and that particularly the Australian beetles had been credited with work that there is no evidence that they ever accomplished. As against the San José scale the Australian insects have been of no value whatever. Combined with climatic condition the scale has been reduced to harmless number in Southern California by *Chilocorus bivulnerus* and *Aphelinus fuscipennis*. In Northern California the scale is being kept under by systematic spraying. Of all the species introduced into California by Mr. Koebele, one only, excepting the *Vedalia* seems to have increased sufficiently to be useful, and this, *Rhizobius ventralis*, has obtained a permanent foothold thus far in only two counties of the State. He does not believe in the possibility of this insect controlling the black scale, and it certainly has not done so up to the present time.

Mr. A. D. Hopkins read a paper on "Insects Enemies of Trees." An elaborate series of experiments is now being carried on at the West Virginia Station to learn the best time for felling trees, so as to secure total or partial immunity from insect attack. A special insectary has been constructed for this purpose, and a box for each month has been provided for a considerable number of trees. In these boxes are placed twigs, branches and sections of trunk in order that whatever insects may be upon the trees at the time may be determined. Hickory cut in Winter is always seriously injured by *Lyctus striatus*. When cut in July or August, it is not injured by this insect, nor is it attacked by Scolytids. The period when trees may be cut with least danger is not the same for each variety and a number of instances were given. Fire produces favorable conditions for the multiplication of insects. Even when the trees are only a little injured, the insects find a favorable point of entrance, and working from this point make their way into the tree and seriously injure, if they do not kill it. This is especially true of those species of Cerambycids which work in the heart wood, and which, starting from points of injury, will make their way to the center of the tree where they would not have attacked had it been entirely sound. Scolytids he considers the worse enemies of forest trees, and next to them come the species of *Agrilus*. He has found *A. bilineatus* on oak and chestnut, and hickory is also injured by a species belonging to this genus. He called attention to the curious habit of *Obera ruficollis*, which makes a double girdling on the twigs attacked by it, and in which it lays its eggs. A lepidopterous borer which has not been determined has become a pest on maples by working in the twigs and causing their death. He has observed that maples infested by the oyster-shell bark-louse matured their fruit much earlier than usual, the effect of the insects being to produce premature ripening. *Odontota dorsalis* has been exceedingly abundant on locust, and has done much mischief. It seems to have possibilities of becoming troublesome in other directions, and has been noticed feeding on leaves of apples, oaks and other trees. It was noted that *Xyleborus celsus* in hickory stumps always arranged matters so that one specimen was on guard at the opening, presenting the end of the elytra to the outward. Mr. Hopkins suggests that possibly this may be the reason for the armature of the elytra in many Scolytids, presenting to an entering enemy the least vulnerable point. It would probably keep out a large proportion of troublesome species that might otherwise invade the burrows and injure the larvæ. *Lina lapponica* has been very injurious to willows, almost defoliating them in some cases. He has been unable to find a single living specimen of *Dendroctonus frontalis*, and there has been no opportunity for *Clerus formicarius* to prove its usefulness as against these insects. He finds also, that many wood-borers are killed by a species of *Isaria*, and he suggested that this fungus may be very useful in keeping down insects of this description under some circumstances.

Mr. Fletcher agreed with Mr. Hopkins as to the injury caused by fire and its consequences. In his experience trees burned over during the Summer must be cut early next year, as otherwise it would be seriously injured by insects. Among the most troublesome forms in Canada are the species of *Monohammus*, which enter the trees very soon after the injury. There seems to be some mistake in the general belief as to the length of time required by this larva to reach maturity. He is convinced that in many cases the insect undergoes its development in one year, especially where the eggs are laid early in the season. Where they are laid later, they may need two years to reach their full development. The insects bore into the solid wood after they become partially grown, but seem to have the habit of coming back occasionally and working for a time under the bark and in that way keeping the channel open and of sufficient size, while also enlarging the chamber made by them under the bark. Protection can be secured against many insects by cutting strips of the bark after the trees has been felled. Serious injury is done, unquestionably, each year by the action of insects.

Mr. Fernald referred to the work done by the Gypsy moth Committee during the past year and to the difficulties in securing the necessary support from the Legislature of Massachusetts. Mr. Forbush and Mr. Kirkland explained respectively the field work done and the lines of experiments that were carried on in the laboratory. There was some general discussion on the importance of the work, as the outcome of which resolutions were adopted by the Association recommending its continuance, declaring its importance and expressing confidence in the ability of the Committee.

Afternoon Session.—Mr. M. V. Slingerland showed a series of photographs of insect and insect work, calling especial attention to certain of them, and to some new facts illustrated for the first time. Referring to the Codling moth, adults emerged from larvæ collected on the trees in Spring, beginning June 13, and continuing to June 22, much later than had been supposed heretofore. The egg stage lasts from seven to ten days, and the eggs are not laid, as originally believed, on the blossom end of the apple, but anywhere on its surface. The little larva, however, as a rule enters the apple at the blossom end, crawling from the point where it hatched to the point of entry. He further called attention to the fact that the lobes at the blossom end of the apple tended to close after the apple became of some size, not to reopen until a much later period of growth. Apples sprayed in that condition would not be likely to receive much of the poison at the point where the larvæ enter; but on the other hand whatever poison was lodged before the lobes closed, would be retained in position and would not be likely to wash out by rains. As to the number of broods the rule seems to be, near *Ithaca*, that there is one only, as indicated by Mr. Smith, from New Jersey; occasionally, however, a caterpillar goes through its entire transformations the same year. Mr. Fletcher, speaking to this point, stated that east of Toronto one brood was normal, west of Toronto there were two annual broods.

Mr. J. A. Lintner gave notes on "Insect Attacks of the Year." The season was remarkable for the absence of the apple Aphis, the bud worm, the apple *Bucculatrix* and the hop Aphis. There has been also a great paucity of insect life in the Adirondacks, many species ordinarily abundant being entirely wanting. The army worm appeared injuriously in forty-eight of the sixty counties in the State. There was not, however, a uniform infestation, but rather an attack in patches here and there in each county. The first report was received July 1st and others came in rapid sncccession after that time. The bran, sugar and arsenic mash proved very successful in attracting and killing the insects. They would feed upon this material in preference to oats and grasses, and even leave corn plants for it. The wheat-head army worm also appeared in injurious numbers in St. Lawrence County, and did considerable injury. The canker worm, *Anisopteryx vernata*, was serious in scattered localities and quite resistent to arsenical mixtures; one pound in one hundred gallons being required. *Macrobasis unicolor* was very injurious on a locust hedge in New York City; pyrethrum was recommended and proved entirely successful in killing or driving away the insects. *Cacœcia rosaceana* was destructive in apple orchards, and another larva, possibly that of *Nolophana malana*, was found boring into apples. The asparagus beetle is still spreading, and has now reached Oneida County. *Elaphidion villosum* has been injurious on apple. *E. parallelum* has been abundant in maple. The chinch bug has been reported in meadows in northwestern New York. The San José scale seems to be dying out in New York, except in the southeastern portion of the State, which may be due to the abnormally low temperature of the past Winter. *Gossyparia ulmi* has been found in Albany County.

Mr. Fernald states that he has found one pound of Paris green in one hundred and fifty gallons of water sufficient to kill the canker worm, and this is the proportion almost universally used in Massachusetts.

Mr. Webster says that this will not serve in Ohio, but he explains this by saying that the application was made against nearly full-grown caterpillars. In their earlier stages the larvæ would probably be killed by the weak mixture. The bud worm has been very abundant in Ohio, and *Euphoria inda* has been found attacking peaches.

Mr. Kirkland said the army worm had been seriously injurious in many parts of Massachusetts, and had damaged a large portion of the cranberry crop. He writes, September 3d, that at Hingham, Mass., a third brood of army worms was then threatening to be as destructive as any that preceded it. He found them at that time of all stages from quite young to nearly mature.

Mr. Smith said that the army worm had appeared in New Jersey in some numbers, but only in isolated localities here and there It was not always the same brood that did the damage. The first brood seemed to be the injurious in one of the southern counties of the State, and reports were received as early as May. In Middlesex County it was not until July that a locality was reported, but this was confined to a small portion of a single field. Yet later, in early August, a single field near Egg Harbor City was reported as being injured. The new asparagus beetle, *C. 12-punctata* is gradually spreading in New Jersey and now covers a considerable portion of the southern part of the State.

Mr. Johnson reported the first brood of the army worm destructive in Illinois. He had noticed that they were suffering during the middle of June from some fungous or bacterial disease that killed a very large number of them. This disease is being studied by Prof. Forbes.

(To be continued.)

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

CLEVELAND NATURAL HISTORY CLUB.—A group of the Cleveland lovers of nature have planned to join in the organization of the large class of those in the city who are animated with the same interest. An initial meeting was held in Adelbert College on Sept. 14, 1896, when twenty-six persons signed a resolution that—

"An organization be instituted which shall exist.

"To bring into contact those who are interested in the study of the earth, its atmosphere, and its forms of life.

"To represent these interests in the Cleveland Academy of Science; and

"To promote scientific interest by appropriate means."

Two weeks later a constitution was adopted and officers designated. The name chosen for the organization was the Natural History Club.

Besides the regular meetings, held once a month, special field and laboratory meetings of those interested in particular departments will be held.

Mr. M. Bubna, of Cleveland, states that the Club has organized an entomological department, and that much interest is being taken. We wish the Club much prosperity.

FROM the Memorias y Revista de la Sociedad Cientifica "Antonio Alzate," volume ix, numbers 9 and 10 (City of Mexico, 1896), we translate the following:

"Questions of systematic Natural History:

"1. What subjects of study do you recognize as more important for Natural History than the *simple* description of new species and subspecies.

"2. The synonymy already so extensive becomes each day more confused. Do you know the cause? What is the remedy?

"3. Does it appear to you convenient to attach the name of the author to the names of species and of subspecies rather than the date of publication to these names? (for example: *Tamias striatus typicus* Merriam would be written *Tamias striatus typicus* 25, 2, 86).

"Please answer fully. The answers will be published in the Memoires et Revue of the Scientific Society 'Antonio Alzate.' A. L. HERRERA."

The next page but one contains the following answers:

"1. Comparative Anatomy and Physiology to recognize the affinities, the only guide to classification.

"2. Vanity of little apprentices who wish to be taken for naturalists. There is no remedy; it is an incurable psychopathy.

"No one will accept this proposal. Will an author publish a book without signing it? Besides, it is often very difficult to arrive at the first date of emission of a name. Dr. Alfred Duges, Professor in the State College, Guanajuato, honorary member of the Scientific Society of Chili, Member of the Mexican Society of Natural History, of the Scientific Society 'Antonio Alzate,' etc."

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be **limited to twenty-five** for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. **Please put date of capture and exact locality on each specimen.** Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

[illegible] received at the Academy [illegible] the Entomology of the Americas (North [illegible] monographs, or con- [illegible] Contributions to the anatomy of [illegible] will be recorded.

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1. [illegible] of Economic Entomologists.—Address of the President.—The Evolution of Economic Entomology. [illegible] Buffalo, N. Y., Aug. [illegible]

2. Zeitschrift für wissenschaftliche Zoologie, [illegible] Leipsic, [illegible]—On the alterations of the [illegible] of the alimentary canal of *Tenebrio molitor* during metamorphosis. J. Rengel, 1 pl.

3. Travaux de la Société des Naturalistes à l'Université Impériale de Kharkow, [illegible]—[illegible] Braconidæ of the environs of Kharkow, with [illegible] tables of the families, genera and species of these insects. [illegible] (in Russian).

4. Zoologische Jahrbücher, [illegible] Jena, Sept. [illegible] 1896.—Researches on the form of the "chewing stomach" (Kaumagen) of dragonflies and their larvæ. Dr. F. Ris, [illegible] figs.

5. Annales de la Société Linnéenne de Lyon, xlii, 1895.—Habits and metamorphoses of insects [Coleoptera], Capt. Xambeu.

6. Actes de la Société Linnéenne de Bordeaux, xlviii, 1895.—Remarks on the organization, comparative anatomy and development of the last segments of the body of the Orthoptera, A. Peytoureau, 6 figs., 14 pls. On the supposed parthenogenesis of *Halictus*, J. Perez. Observations on the instinct of some Hymenoptera of the genus *Odynerus* Latr., C. Ferton. New observations on the instinct of gastrilegide Hymenoptera of Provence, id. New fossorial Hymenoptera and observations on the instinct of some species, id.

7. Bulletin de la Société des Sciences Naturelles de l'Ouest de la France, vi, 2. Nantes, June 30, 1896.—Parthenogenesis in *Bacillus gallicus* Charp., J. Dominique.

8. [illegible] du Muséum d'Histoire Naturelle, 1896, No. 4. Paris. [illegible]idents caused by ingestion of larvæ of *Aglossa pinguinalis*. [illegible]—No. 5.—Note on a collection of insects from cadavers [illegible] a medico-legal point of view, presented to the Museum. [illegible]—No. 6.—The fauna of the catacombs of Paris, A. Viré. [illegible] of the cryptocerate Hemiptera belonging to the families [illegible], Naucoridæ and Nepidæ, J. Martin. Digestive apparatus [illegible]ale (*P*[illegible] *americana* and *P. orientalis*), L. Bordas.

9. CONGRES SCIENTIFIQUE A L'OCCASION DE L'EXPOSITION NATIONAL DE 1895. Angers, 1895.—Observations on a new species of butterfly which is developed in a woody gall, of American origin, Dr. P. Maisonneuve.

10. BULLETIN DE LA SOCIETE LINNEENNE DU NORD DE LA FRANCE. Amiens, September, 1895.—Monstrosity in the left antenna of a *Carabus granulatus*, L. Carpentier, fig.——November, 1895.—Habitat of the Psyllidæ of France, M. Dubois.

11. MEMOIRES DE LA SOCIETE ZOOLOGIQUE DE FRANCE, viii, 12. Paris, 1895.—Studies on ants, wasps and bees: ix. On *Vespa crabro* L , history of a nest from its origin, C. Janet. On *Stylogamasus lampyridis*, an Acarine parasitic on *Lampyris splendidula*, A. Gruvel, figs.

12. ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE FRANCE, lxiv, 1. Paris, Aug. 16, 1895.—New species of Coreidæ of intertropical America, A. L. Montandon, 1 col. pl. Fauna of Algeria and Tunis—Orthoptera, A. Finot (continued in Nos. 3 and 4). Descriptions of new genera and species of Coleoptera of the family Bostrychidæ, P. Lesne. On a fossorial Hymenopter of the genus *Pepsis*, which provisions its larvæ with a large species of *Mygale*, and remarks on some parasites of spiders, Dr. A. Laboulbene. Ichneumonidæ of Europe and the limitrophic countries (cont.), G. V. Berthoumieu (continued throughout the volume).——2. Nov. 27, 1895.—Dytiscidæ found in tobacco, Dr. M. Régimbart, 1 pl. Revision of the genus *Tyropsis* Saulcy (*Aplodea* Reitter) and description of two new genera of the same group, A. Raffray.—3. Feb. 29, 1896 (see above).—4. June 10, 1896 (see above).

13. PROCEEDINGS OF THE NATURAL SCIENCE ASSOCIATION OF STATEN ISLAND. New Brighton, N. Y., Oct. 10, 1896.—Notes on crickets and other Staten Island Orthoptera, W. T. Davis.

14. THE ZOOLOGICAL MAGAZINE, viii, 95. Tokyo, September, 1896.—On thoraco-abdominal muscles of silk-worms, S. Ishiwatari. On Strepsiptera of Japan (cont.), S. Ikeda (both in Japanese).

15. LE NATURALISTE. Paris, Oct. 15, 1896.—Monographic essay on the Coleoptera of the genera *Pseudolucanus* and *Lucanus*, L. Planet, figs.

16. THE AMERICAN MONTHLY MICROSCOPICAL JOURNAL. Washington, October, 1896.—The San José scale. By chrysanthemum, figs.

17. ZOOLOGISCHER JAHRESBERICHT FUR 1895. Berlin, 1896.—Arthropoda other than crustacea, Dr. P. Mayer.

18. REPORT ON THE WORK OF THE HORN SCIENTIFIC EXPEDITION TO CENTRAL AUSTRALIA. Part II—Zoology. London and Melbourne, February, 1896.—Received Nov. 3, 1896, 4to. Lepidoptera, O. Lower. Coleoptera (exclusive of the Carabidæ), Rev. T. Blackburn. Araneidæ, H.

R. Hogg, 1 pl. Orthoptera, J. G. O. Tepper. Carabidæ, T. G. Sloane. Honey ants, W. W. Froggatt, 1 pl.

19. Appleton's Popular Science Monthly. New York, November 1896.—Evolution of insect instinct, C. Perton (translated from the Revue Scientifique).

20. Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Classe, civ, 1 and 2. Vienna, 1895.—The Myriapoda of Steiermark, Dr. C. Graf Attems, 7 pls.—5-7. Remarks on some new genera of the Muscariæ and indication of some original examples, F. Brauer, 1 pl.—8. Supplements and conclusion to the monograph of the digging wasps allied to *Nysson* and *Bembex*, A. Handlirsch, 2 pls.

21. Denkschriften of the preceding, lxii. Vienna, 1895.—Contributions to the knowledge of the genera *Phytoptus* Duj. and *Monaulax* Nal., Dr. A. Nalepa, 4 pls.

22. Proceedings of the Bristol Naturalists' Society (N. S.), viii, 1, 1896.—Bookworms found in America, A. C. Fryer.

23. The International Journal of Microscopy and Natural Science (3), vi, 32. London, October, 1896.—Predaceous and parasitic enemies of Aphides, including a study of hyper-parasites (cont.), H. C. A. Vine, 2 pls.

24. Le Naturaliste Canadien. Chicoutimi (Prov. of Quebec), October, 1896.—Coleopterological fauna of Manitoba, G. Chagnon.

25. Centralblatt fur Physiologie. Leipsic and Vienna, Oct. 17, 1896.—The Röntgen rays visible to insects, Prof. D. Axenfeld.

26. The Canadian Entomologist. London (Ont.), November, 1896, —Butterflies taken at Orillia, Ont., C. E. Grant, fig. Notes on the preparatory stages of *Erebia epipsodea* Butler, H. H. Lyman. *Aellopos titan* Cram., A. F. Winn. The gypsy moth in Massachusetts, A. H. Kirkland. New species of *Nomada* and *Chyphotes*, T. D. A. Cockerell. A. A. A. S. Entomology in section "F," Buffalo meeting, D. S. Kellicott. "Die Saturniiden," A. R. Grote. Rare butterflies, A. Gibson. Miss G. E. Ormerod, C. J. S. Bethune.

27. The Entomologist. London, November, 1896.—*Vanessa antiopa*, W. F. Kirby. On the vertical distribution and derivation of the Rhopalocera in the Pyrenees, W. H. Bath. On jumping cocoons from S. Africa, D. Sharp.

28. Bulletin No. 4 (new series), U. S. Dept. of Agriculture Division of Entomology.—The principal household insects of the United States. By L. O. Howard and C. L. Marlatt. With a chapter on insects affecting dry vegetable foods by F. H. Chittenden. Washington, 1896. This bulletin of 130 pages and nominally (but in reality many more than) 63 fig-

ures is one of, if not *the* most interesting and most useful ever issued by the Division. Some thirty species or groups of species found in American (not European) houses are described and figured, and the various remedies for their destruction or abatement are given.

29. THE ENTOMOLOGIST'S MONTHLY MAGAZINE. London, November, 1896.—Economic specimens in the insect gallery of the Natural History Museum, South Kensington, C. O. Waterhouse. Oceanic migration of a nearly cosmopolitan dragonfly (*Pantala flavescens* F.), R, McLachlan. Note on *Eristalis tenax* in New Zealand, W. W. Smith. Histeridæ, etc., associated with owls, J. J. Walker.

30. BULLETIN OF THE ILLINOIS STATE LABORATORY OF NATURAL HISTORY, Urbana, Ill., iv. Springfield, Ill., 1896.—Art. ix. A check list of the Coccidæ, T. D. A. Cockerell. Art. xii. On a bacterial disease of the squash-bug (*Anasa tristis* DeG.), B. M. Duggar, 2 pls. Art. xiii. Descriptions of five new species of scale insects with notes, W. G. Johnson, 6 pls.

31. PSYCHE. Cambridge, Mass., November, 1896.—Notes on the Acrididæ of New England—ii. Tryxalinæ—vii, A. P. Morse. New Sminthuri, including myrmecophilous and aquatic species, J. W. Folsom, 1 pl. Partial life-history of *Halisidota cinctipes* Grote, H. G. Dyar.

32. TRANSACTIONS OF THE AMERICAN ENTOMOLOGICAL SOCIETY, xxiii, 3. Philadelphia, July-September, 1896.—On Illinois grouse locusts, J. L. Hancock, 4 pls. A classification of the Geometrina of North America, with descriptions of new genera and species, Rev. G. D. Hulst, 2 pls.

33. RULES FOR REGULATING NOMENCLATURE with a view to secure a strict application of the law of priority in entomological work. Compiled by Lord Walsingham and John Hartley Durrant. Longmans, Green & Co. London, New York and Bombay. 2 Nov. 1896, 18 pp. Price 6d.

34. THE ENTOMOLOGIST'S RECORD. London, Oct. 15, 1896.—On the hybernation of certain British butterflies in the imago stage, J. W. Tutt. Mimicry—vi. Selection guided by utility at work, id. The habits of *Porthetria dispar*, id.——Nov. 1, 1896.—The antennæ of Lepidoptera. Their structure, functions and evolution, J. W. Tutt. 1 pl. Nervures, id. Notes on the life history of *Papilio machaon*, A. Bacot.

35. MITTHEILUNGEN DER SCHWEIZERISCHEN ENTOMOLOGISCHEN GESELLSCHAFT, ix, 8. Schaffhausen, July, 1896.—Note on the tribe of the Embina, H. de Saussure, 1 pl. On Cetonidæ, Dr. G. Schoch. Coleoptera helvetica (cont.), Dr. Stierlin.

36. ON SOME SCALE INSECTS. By L. O. Howard (read before the Massachusetts Horticultural Society, Feb. 15, 1896). Boston: Press of Rockwell and Churchill, 1896. 15 pp., 4 pls.

37. BULLETIN 116. New Jersey Agricultural Experiment Stations, Sept. 22, 1896.—The pernicious or San José scale, J. B. Smith, figs.

38. Circular No. 17. Second Series U. S. Dep't of Agriculture, Division of Entomology. The peach-tree borer (*Sannina exitiosa* Say), C. L. Marlatt, figs.

39. Entomqlogische Nachrichten, xii, 19 and 20. Berlin, October, 1896.–Review of the known palaearctic species of the coleopterous genus *Brachyleptus* Motsch., E. Reitter. Review of the palearctic species of *Gnathoncus* known to me, id.

40. Annales de la Societe Entomologique de Belgique, xl, 9. Brussels, Sept. 30, 1896.—Descriptions of new Arachnids of the family Clubionidæ, E. Simon.

41. First Annual Report of the Entomologist of the State Experiment Station of the University of Minnesota to the Governor, for the year 1895. By Otto Lugger. Minneapolis, 1896, 8vo, 155 pp., 72 text-figs., 16 pls.

42. Proceedings of the Entomological Society of Washington, iv, 1, Nov. 5, 1896 —Semi-tropical Texas, E. A. Schwarz. On the genera of the Eupelminæ, W. H. Ashmead. On the affinities of *Neolarra*, C. F. Baker. Sleeping trees of Hymenoptera, E. A. Schwarz. Termitidæ observed in southwestern Texas in 1895, id. A pod-inhabiting Longicorn found at the Columbian exposition, F. H. Chittenden and M. L. Linell.

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Doings of Societies.

PHILADELPHIA, November 10, 1896.

A stated meeting of the Feldman Collecting Social was held at the residence of Mr. H. W. Wenzel, 1509 S. 13th Street. Members present: Messrs. Castle, Griffith, F. Hoyer, Johnson, E. Wenzel, Seiss, H. W. Wenzel, Laurent, Boerner, Fox, A. Hoyer, Schmitz, and Haimbach. Honorary members: Dr. Henry Skinner and John B. Smith. Visitors: Messrs. Edward A. Klages and James Stewart. Meeting called to order at 8.45 P.M. Vice-president Castle presiding.

Communication from Mr. Chas. Fuchs, San Francisco, Cal., dated Oct. 10, 1896, read by the secretary and filed.

Prof. Smith, referring to Mr. Klages remarks at the previous meeting concerning his account regarding the breeding of *Scolytus* as published in the NEWS, stated that he considered it of the utmost importance for Mr. Klages to report the number of species of Cleridæ bred with them, as the larvæ of all Cleridæ are predaceous and live on *Scolytus*.

Mr. Klages, in reply, stated that he should have done this, but unfortunately he had left his record concerning these at home; he, however, could obtain it when required.

Prof. Smith also referred to Mr. Wenzel's remarks concerning the finding of *Criocerus* 12 *punctatus*, mentioning the fact that he had himself frequently failed to find these in the asparagus fields, but had always succeeded in finding them on the voluntary plants outside of the fields, finding quantities of them on these plants all along the railroad. He also mentioned that he had found specimens from the first brood of *Crioceris* hibernating in June.

Dr. Skinner said he was surprised to note the amount of variation in individuals of *Argynnis diana*, having recently caught a number, and also studied a goodly series. The female varies much in the amount of silver beneath, and also in the band of large bluish and greenish spots on the inferiors above. In some specimens these spots are large, and in others is confined to a small amount around the black spots (ground color of wing). The number and size of the cream colored spots on superiors above is also quite variable. The males differ materially in the number and size of the black spots on upper side of inferiors. Judging from the specimens examined the females found in eastern Tennessee, western North Carolina and southern Illinois are larger than those found in the mountains of Virginia. Some of the females are blue and others green. This is also true of butterflies of like color such as *Papilio philenor* and *Limenitis ursula*. This fact seems to have been lost sight of by Godman and Salvin in the "Biologia Centrali-Americana" as they have probably described two species from individuals of one species. *Papilio corbis* and *P. orsua* differing only in color, the former being green and the latter blue. The probable synonymy of these being as follows: *Papilio philenor* var. *acauda* Oberthur (Etud. d'Ent. iv, 98, 1880) = *nezahualcoyotl* Strecker = *corbis* = *orsua* Godman and Salvin.

Mr. Laurent exhibited some specimens of Lepidoptera which showed some noticeable variations in markings and coloring, also calling special attention to a specimen of *Catocala consors* captured by Mr. H. W. Wenzel at Dacosta, N. J., on July 19: also a specimen of *Melipotis limbolaris* captured by himself at Hemlock Falls, in the Orange Mountains, near Newark, N. J., on July 4.

Dr. Skinner reported the capture of *Thecla jada* Hew. at Tucson, Ariz., by Dr. Kunze May 28.

No further business being presented the meeting adjourned to the annex at 10.30 P.M. THEO. H. SCHMITZ, *Secretary*.

The Entomological Section

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF MEETINGS.

The following paper was read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS:

PARASITES OF SPIDER EGGS.

By A. DAVIDSON, M.D., Los Angeles, Cal.

Mr. L. O. Howard, in vol. ii, No. 3, Proc. Ent. Soc. Wash., has given a complete summary of the hymenopterous parasites of spiders known at that date. and Dr. McCook, in the third volume of his work on "Spiders and their Spinning Work," has further enlarged the list of known parasites, but has somehow overlooked one important one that I had already discovered and reported in "Insect Life," vol. v, No. 1.

The parasites of spider eggs are, with the exception of *Eupelmus piceus*, quite rare here, and the following are all I have observed in this district during the last four or five years:

Pimpla aquilonia Cress. ? from egg-sacs of *Argiope argentata* and *Theridium tepidariorum*.

Pimpla rufopectus Cress. on *Argiope argentata*.

Hemiteles davidsonii Ashm. n. sp. I discovered one specimen of this species of which a description by Mr. Ashmead is herewith appended among the eggs of a Laterigrade? on a shrub of *Tetradymia* in Bear Valley 6000 feet altitude. The insect hatched out in December.

Eupelmus piceus Riley. Very common on *Argiope argentata;* once observed on *Phidippus opifex* McC.

Gaurax araneæ Coq. n. sp. on *Epeira angulata* and *Lathrodectus mactans* (see the appended description).

Sarcophaga davidsonii Coq. on *Phidippus opifex* and *Argiope argentata*.

Dr. McCook, in discussing my observations on the protective coloration shown by the cocoons of *Epeira argentata*, remarks that "the protective resemblance did not protect, as appears from the numerous broods of invading ichneumons." This is rather a curious interpretation to make of this observation. It is true that the protective coloring did not protect from the ichneumons, and it seems difficult to see by what, if any method, it could be protected from them, but the coloring *does* protect it from the depredations of birds, which, in the process of building their nests, destroy large numbers of the cocoons of other species.

Gaurax araneæ Coq. n. sp.—Head and all its parts yellow, only the eyes, antennal arista and an ocellar dot, black. Thorax pale yellow, marked with four orange-yellow dorsal vittæ, of which the two median are sometimes brown; pleura yellow, marked with an oval black spot near the center and sometimes with a black dot back of the humeri; scutellum yellow, marked with a median brown vitta; metanotum in the middle brown. Abdomen black, marked with a large V-shaped yellow spot at the base. Legs, including the coxæ and tarsi, wholly yellow. Wings hyaline. Length 3 mm.

Southern California. Five specimens, bred by Dr. A. Davidson from egg sacs of *Epeira angulata* and *Lathrodectus mactans* (probably a scavenger. A related species, *Gaurax anchora*, was bred by Osten Sacken from deserted cocoons of the moth, *Samia cecropia*).—Coquillett.

Hemiteles davidsonii Ashm. n. sp. ♀.—Length 4.5-5 mm. Opaque black, evenly microscopically shagreened; joints 1-4 or 5 of antennæ, mandibles, prothorax and legs ferruginous, the hind tibiæ obfuscated; tegulæ and base of stigma white; wings hyaline, with two fuscous bands; palpi subfuscous. Head transverse, the clypeus not separated from the face; antennæ 33-jointed, two-thirds the length of body; mesonotum without distinct furrows, the furrows being only slightly indicated anteriorly, entirely wanting on disc and posteriorly; metanotum completely areolated, the spiracles small, rounded; ovipositor not longer than the basal joint of hind tarsi.

Hab.—Bear Valley, California. Described from a single ♀ specimen bred by Dr. A. Davidson from an egg-sac of an unknown spider.

The species evidently belongs to Forster's subgenus *Ilapinastes.*

Entomological News for November was mailed October 31, 1896.

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Entomological News

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JANUARY, 1896.

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Supplement to same, 1895	[illegible]
Synopsis of Hymenoptera of America North of Mexico, by E. T. Cresson. Part I, Families and Genera; Part II, Catalogue of Species and Bibliography, 1887	3.00
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Scudder (S. H.)—The Life of a Butterfly, 182 pp., 4 pls. .	[illegible]
Guide to Commoner Butterflies of North. U. S. and Canada, 206 pp.	[illegible]
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Smith (J. B.)—Catalogue of the Lepidopterous Superfamily Noctuidæ found in Boreal America (Bull. U. S. Nat. Mus. 1893) 424 pp., 8 vo.	2.50
—— Descriptions of new genera and species of (N. American) Noctuidæ; 1894, 50 pp., 6 pl.	75
Neumoegen and Dyar.—A preliminary revision of the Lepidopterous family Notodontidæ, 1894, 30 pp.	[illegible]

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☞ These notices are continued as long as our limited space will allow; the new ones are added at end of the column, and only when necessary those at the top (being longest in) are discontinued.

Lepidoptera, in papers, from India, in great variety, to exchange for South American, on equal terms.—Shelley W. Denton, Wellesley, Mass.

Lepidoptera.—Wanted *Samia cynthia* cocoons for cash.—A. W. Pearson, 24 Cliff Street, Norwich, Conn.

Lepidoptera.—I have R. I. specimens to exchange for southern or western.—Wm. Dearden, Lonsdale, R. I.

Thysanura.—Named alcoholic, or balsam mounted Maine specimens for exchange. Will name specimens for duplicates.—F. L. Harvey, Orono, Me.

Lepidoptera.—Eggs or live pupæ of *Citheronia regalis* wanted; will give in exchange mounted specimens *C. relicta* and *Plusia striatella.*—Wm. Metcalfe, P. O. Box 204. Port Hope, Ont., Canada.

Phoridæ.—I expect to work on a monograph of the family next Winter. Will be grateful for material from all parts of N. A. After the work is finished the duplicates will be divided among those who have sent specimens.—J. M. Aldrich, Moscow, Idaho.

N. B.—Until notice to the contrary is given, correspondents and others will please withhold any insects which they may have intended to send to me, since I will be unable to give attention to such specimens.—P. P. Calvert.

Cerambycidæ.—Wanted in exchange for Cerambycidæ only. Send duplicate list to O. Dietz, 23 Park Row, New York, N. Y.

Lepidoptera and other orders.—To exchange for desiderata in Lepidoptera and Coleoptera.—Surgeon Major Clements, A. M. S., Sierra Leone, West Africa.

Diptera.—Sarcophagidæ and Muscidæ (*sens. strict.*) wanted from all localities in exchange for other Diptera, or will purchase.—Garry deN. Hough, New Bedford, Mass.

Hymenoptera.—Fossores and Bees wanted from western and southern United States, named or unnamed. Offer good American and European Coleoptera, Lepidoptera and Hymenoptera in return.—S. N. Dunning, 43 Niles Street, Hartford, Conn.

Lepidoptera.—Will exchange New England specimens for Lepidoptera from all parts of the world.—John C. Perry, Sec'y "A. A. 323 B," 238 Broadway, Malden, Mass.

Orthoptera.—Specimens of the family Tettigidæ wanted from all parts of North America.—Dr. J. L. Hancock, 255 31st St., Chicago, Ill.

Rare Exotic Butterflies.—*Ornith. urvilliana, antimachus, dynastor, napoleon,* etc. Wanted U. S. 10-cent stamps 1847 and 1851-66 5-cent red-brown and yellow and others. Reference: Hy. Skinner, M.D.—W. Dannatt, Ivy Dene, Westcombe Park, London, England.

Lepidoptera.—Cocoons of *Luna, Io, Cecropia, Promethia* and *Polephemus* to exchange for sp. not in my collection. Also good pinned and papered material for ex.—Leigh I. Holdredge, Oneonta, N. Y., U. S. A.

Lepidoptera from Utah, the N. W. and Illinois for exchange. *Chionobas chryxus, Melitæas, Lycænas, Epicallia virginalis, Gnophæla vermiculata,* etc. I especially desire Argynnids, but accept anything not in my collection.—Arthur J. Snyder, 2622 Hartzell St., Evanston, Ill.

Lepidoptera.—I will exchange *Colias philodice* and *Pieris rapæ* for *Colias* or *Pieris* from the Gulf States, especially Florida. All in papers. —Sidney C. Carpenter, 122 Garden Street, Hartford, Conn.

Lepidoptera.—Exchange wanted in Lepidoptera from all parts of U. S. Correspondence desired with beginning Lepidopterist; have native and foreign Lepidoptera to exchange.—Henry Engel, care of General Delivery, Pittsburg, Pa., U. S. A.

Coleoptera.—*Cicindela lecontei* and *C. scutellaris* wanted in exchange for eastern varieties of this species and other good Cicindelæ. N. A Coleoptera desired for Coleoptera from N. Y. and Md.—Frank H. Johnson, 1128 McCulloh St., Baltimore, Md.

Lepidoptera.—Exchange desired with collectors everywhere. I offer North and Central Amer. species.—J. L. Healy, 811 Morse Ave., Chicago.

Lepidoptera from Nevada and California for exchange, also live pupæ and cocoons.—Fred. Burns, Truckee, Cal.

Lepidoptera.—I have specimens of *Argynnis bellona*, *A. myrina*, *Phyciodes nycteis*, *Satyrus nephele*, *Ancyloxypha numitor*, *Lycæna scudderii*, *Pamphila zabulon*, for exchange.—C. T. Hills, 18 Sussex Ave., Toronto, Ont., Canada.

Lepidoptera.—Wanted pupæ of *imperialis*, *regalis*, *modesta*, etc., by purchase, or exchange for valuable material. Address: Herman Aich, Elberfeld, Germany.

Wanted, entomological literature. Will exchange Kansas Coleoptera. I also desire Coleoptera from other localities.—J. C. Bridwell, Baldwin, Kans.

Lepidoptera.—Larvæ of any Thyridæ and Pericopidæ greatly desired: also Endromis, stage I, and any Maniidæ or Castniidæ.—Harrison G. Dyar, 243 W. 99th St., N. Y.

Coleoptera.—*Monohammus scutellatus* and *Boletotherus bifurcus* offered in exchange for other N. A. Coleoptera not in my collection.—Herman H. Abeling, Torrington, Conn. Box 305.

Coleoptera.—Miscellaneous Coleoptera of Klamath County, Oregon, in exchange for Eastern U. S. or Canadian butterflies. For terms apply to B. L. Cunningham, Fort Klamath, Oregon.

Wanted, a high-grade breach-loading shot-gun—a Burgess repeater preferred: also a trained bird dog: will give good exchange of foreign and domestic butterflies and moths.—J. S. Cotton, 16 4th St., Oneonta, N. Y.

Lepidoptera.—Will exchange Lepidoptera of Missouri and Illinois for those of other localities. Send lists. All letters answered.—Ernst Schwarz, 6310 Newstead Ave., St. Louis, Mo.

Lepidoptera.—Wanted by exchange or purchase, from all countries. Correspondence solicited.—H. K. Burrison, West Newton, Mass.

Lepidoptera.—I have specimens for exchange.—James E. Cottle, 1528 Jackson Street, San Francisco, Cal.

Lepidoptera and **Coleoptera.**—Tennessee specimens offered in exchange. A few examples of *Pamphila vehl*, *Pholisora hayhurstii* and *Amblyscirtes textor*.—William Osburn, 107 University St., Nashville, Tenn.

Lepidoptera.—Wanted cocoons of *Telea polyphemus*, *Actias luna*, *Callosamia promethea*, *Hypochiria io* and *Hemileuca maia* for papered Lepidoptera. A large exchange list.—W. E. Longley, 115 Ridgeland Avenue, Oak Park, Ill.

Literature.—John Hamilton, M.D., 18 Ohio St., Allegheny, Pa., will send 20 or 25 of his papers published in the Can. Ent. on receipt of 12 cents in stamps to cover postage (18 copies).

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Entomological News

FEBRUARY, 1896.

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35	5	710	5	1201	10	18	10	83	5	3608	5	25	10
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65	20	776	15	63	5	58	5	71	5	36	5	60	15
72	10	784	5	80	5	62	10	73	5	57	5	64	20
76	3	786	8	1338	8	68	5	78	8	68	5	65	25
96	20	790	8	45	8	2303	5	81	10	69	5	69	10
119*c*	10	809	5	69	10	11	5	92	25	81	3	4619	5
139	15	814	5	89	5	83	5	3204*a*	10	87	5	21	5
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195	8	821	5	8	15	52	5	25	5	97	3	36	15
201	5	822	10	23	10	2556	5	29	10	3706	8	39	5
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217	10	834	5	59	5	79	5	34	10	26	5	71	15
220	5	842	5	74	8	81	5	39	3	34	5	72	15
232	5	863	8	92	3	2618	10	40	10	39	5	4713	10
234	10	866	10	95*a*	8	32	5	57	5	47	5	39	5
237	5	867	10	1502	10	34	5	71	5	81	5	83	10
258	5	872	5	6	8	44	5	99	3	3811	5	4820	5
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292	8	909	10	43	5	2705	5	20	5	79	5	85	5
300	20	922	10	44	5	34	5	49	5	90	10	86	5
305	8	939	5	61	10	53	10	53	5	3923	10	4901	5
324	8	941	5	78	5	80	5	63	5	24	10	20	5
333	8	947	15	88	10	2803	5	89	3	52	5	31	5
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359	5	994	10	97	5	2975	5	92	5	69	8	39	5
386	5	1001	5	1607	5	75*c*	5	93	5	4012	5	47	10
421	5	52	10	13	3	81	5	3418	5	25	5	73	3
445	5	53	10	18	5	93	5	34	3	64*a*	8	5002	5
450	5	56	10	19	5	96	8	42	3	89	25	13	8
472	5	80	5	26	5	98	5	44	3	4128	10	25	10
479	50	81	3	28	5	3005	3	45	5	45	10	29	10
483	5	91	5	35	5	7	3	48	10	49	5	32	5
503	3	1101	5	36	5	15	5	52	5	50	8	33	5
504	15	9	10	65	5	25	5	55	3	52	8	38	5
505	5	11	5	70	5	32	5	62	5	81	5	40	5
511	5	16	8	75	5	34	5	69	5	90	5	45	10
545	5	24	5	90	5	36	3	3515	5	4212	5	69	5
555	5	25	5	94	15	37	5	19	5	54	10	97	5
564	5	38	5	1702	10	41	5	20	3	80	5	98	5
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39	5	83	20	6601	5	96	5	91	5	8107	10	28	5
42	5	93	10	5	5	7000	5	93	5	11	25	31	10
70	5	5904	5	6	5	2	5	98	5	33	10	42	5
5345	5	42	10	14	5	9	5	99	10	39	10	9,104	5
56	5	50	15	17	5	20	5	7501	10	50	5	12	5
71	10	61	10	18	10	26	5	6	5	58	10	22	5
89	5	71	5	28	5	57	5	8	5	8221	10	23	5
5404	3	75	10	39	25	58	5	9	3	26	10	25	5
17	15	76	10	41	8	97	5	10	5	29	10	28	5
22	10	6038	5	62	5	98	5	14	5	33	5	53	5
23	15	90	15	64	10	7100	10	19	5	40	5	79	5
24	10	6101	5	65	5	2	5	26	3	42	10	99	5
26	5	2	5	6720	5	9	5	30	10	44	15	9,201	5
32	5	19	25	26	5	11	5	40	3	45	10	27	5
32*b*	5	53	5	38	5	36	5	41	10	50	10	29	3
48	10	69	10	40	3	49	5	42	10	52	10	9,391	10
52	5	73	20	41	3	71	10	75	10	81	10	9,651	10
63	5	76	10	42	5	82	5	91	5	82	10	9,866	8
64	50	80	25	48	5	7203	10	94	5	84	5	76	8
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80	5	6201	5	65	5	71	15	49	5	20	5	10,165	10
91	3	7	5	72	5	83	10	51	10	29	25	85	10
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45	5	47	10	83	5	3*c*	5	92	5	8409	5	98	10
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69	5	76	10	99	5	20	10	39	5	70	20	18	10
91	5	79	50	6801	5	23	5	40	5	72	5	58	5
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12	15	6317	10	12	5	27	3	48	10	95	10	71	25
16	5	24	10	15	5	37	10	60	8	8503	5	10,512	15
17	5	33	10	32*a*	3	39	10	66	5	4	10	13	15
29	5	35	5	35	5	40	10	70	5	21	10	10,603	5
49	5	37	10	39*a*	5	41	10	7815	5	23	10	38	15
57	5	38	10	45	5	55	5	72	5	29	5	58	10
86	5	41	5	64	5	59	10	92	5	46	5	10,710	5
90	5	44	5	83	10	65	5	94	5	47	5	97	10
96	15	53	5	88	3	80	10	7919	5	49	10	10,820	10
5717	5	84	5	92*b*	5	81	10	23	5	93	10	25	10
24	10	87	5	6902	5	93	5	25	3	8637	5	34	10
33	10	88	10	6	5	94	5	37	10	49	5	60	10
49	10	6427	15	7	5	96	5	45	3	8710	10	65	10
56	5	35	10	12	5	7401	5	51	5	14	5	69	10
72	10	41	5	13	5	6	5	59	3	35	5	10,980	20
74	5	45	10	15	5	25	5	76	10	36	5	85	10
80	10	82	10	28	5	33	10	8000	10	79	5	99	10
89	10	83	10	41	5	34	10	18	10	8807	10	11,015	5
5844	5	6513	5	50	5	35	3	25	5	14	10	73	5
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MARCH, 1896.

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Lepidoptera and **Coleoptera** of Europe and India, blown larvæ, live pupæ for exchange; biological collections. Live pupæ and cocoons wanted.—A. Voelschow, Schwerin, Meckl. Germany.

Tenthredinidæ and Uroceridæ wanted from all parts of U. S. and Can., espec. the S. and S. W., by purchase or exchange. Will name specimens for duplicates.—Alex. D. MacGillivray, Cornell University, Ithaca, N. Y.

Lepidoptera.—American Diurnal Lepidoptera wanted either by purchase or exchange. Many fine species in duplicate. Liberal exchange for desiderata.—Dr. Henry Skinner, Acad. Nat. Sci., 19th and Race Sts., Phila.

Diptera.—Empidæ wanted from all parts of the world for a monograph of the family. Will purchase or exchange for other Diptera.—W. M. Wheeler, University of Chicago, Chicago, Ill.

Coleoptera.—Wanted, by exchange or purchase, first-class specimens of the rarer species of North American Cicindelidæ, not in my collection.—W. C. Wood, 45 East 10th St., New York.

Will collect in almost any order of insects the coming season, for Coleoptera from any locality in North America.—R. J. Crew, 105 Oak St., Toronto, Canada.

Lepidoptera from Nevada and California for exchange, also live pupæ and cocoons.—Fred. Burns, Truckee, Cal.

Wanted.—Lepidoptera from all countries. Will pay cash or exchange. Would like to engage intending visitors to foreign lands to collect for me.—Shelley W. Denton, Wellesley, Mass.

Lepidoptera.—Wanted pupæ and cocoons of *imperialis*, *regalis*, *luna*, *io*, *poliphemus*, *Pap. turnus*, *asterias*, *troilus*, *philenor*; *S. juglandis*, *geminatus*, *myops*, etc.,.—J. Bodenburg, 523 Mo. Ave., East St. Louis, Ill.

Lepidoptera.—I wish to obtain either by purchase or in exchange for ova and young larva of *A. luna*; ova and larva of *imperialis*, *regalis*, *io*, *modesta* and many others.—L. I. Holdredge, 27 Ford Ave., Oneonta, N. Y.

Coleoptera.—Will exchange for species not represented in my cabinet. Coccinelidæ and Cicindelidæ especially desired. Good return.—Frederic Ormonde, 59 Eustis Street, Boston, Mass.

Wanted, to buy a second-hand microscope; to exchange Strecker's Catalogue of Diurnal Lepidoptera against text-book on Reptiles.—L. B. Goldhorn, 200 Hunter St., Sing Sing, N. Y.

Lepidoptera.—I have for exchange a large number of duplicates; also cocoons of *Attacus ceanothi*.—G. T. O. Mueller, 1014 Greenwich Street, San Francisco, Cal.

Lepidoptera wanted by purchase or exchange. Will exchange New England and Florida for exotic in papers. Correspondence with all parts of the world.—Wm. N. Souther, Groton, Mass.

Lepidoptera.—I have a lot of fresh, fine and rare Minnesota Lepidoptera to exchange for foreign and domestic material, in same family.—Henry W. Eustis, 617 S. Ninth Street, Minneapolis, Minn.

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